USHA+

UPS SNMP HTTP AGENT

User Guide

Rev.1.00

AT, IBM are registered trademarks of International Business Machines Corporation.
NetWare are registered trademarks of Novell, Incorporated.
DOS, Windows 95, 98, Me, Windows NT, 2000, XP, 2003 are registered trademarks of Microsoft Corporation.
All other trademarks belong to their respective proprietors.

Electronic Emission Notice

Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

CE Notice

This device complies with the EMC directive of the European Community and meets or exceeds the following technical standard:

- EN 55022:1998 —"Limits and Methods of Measurement of Radio interference Characteristics of information Technology Equipment." This device complies with the CISPR Class B standard
- EN 55024:1998 —"Electromagnetic compatibility— Generic immunity standard Part1: Residential, and light industry."

Safety Information

For USHA+ (Card Type)

- All the service of this equipment must be perform by qualified service personnel. Remove rings, watches and other jewelry before servicing the unit
- Before plug in/pull out the USHA+ card to/from the UPS, please make sure that the power of the UPS must be off. Hot swap of the USHA+ in UPS is inhibited.

Table of Contents

Electronic Emission Notice 2
Safety Information 2
Chapter 1 Welcome 4
Introduction administration 4
USHA+ Resources 4
USHA+ Package Contents 5
Chapter 2 Connect USHA+ to the Network 7
What you need 7
Hardware Installation 7
USHA+ Configuration through TELNET command 17
USHA+ Configuration through a Web Browser 17
USHA+ Initial Configuration 20
Chapter 3 Managing USHA+ via Web Browser 22
Displaying the USHA+ Home Page 22
UPS Monitoring Folder 22
UPS and EMD Management 26
Shutdown Management 30
USHA+ Management 33
Logs 42
Chapter 4 Managing USHA+ via SNMP 46
Setting SNMP parameters in USHA+ 46
SNMP Access Control Setting 46
SNMP Trap Receivers Setting 46
Set up SNMP Manager Software 46
Chapter 5 Shutdown Software 47
Install Shutdown Software in Windows 2000/XP/2003 47
Install Shutdown Software in UNIX & Linux (FreeBSD / IBM AIX / RedHat / Sun Solaris / SUSE/ SCO Openserver / SCO Unixware) 50
Shutdown Process 53
Chapter 6 UPS Power Management 54
Turn off UPS Manually 54
Set UPS To Sleep Mode Manually 54
UPS Shutdown during Power Crisis 55
Managing the UPS Shutdown Schedule 56
Appendix A Technical Information 57
Technical Information about USHA+ Smart II 57
Appendix B Firmware Upgrades 60
General information 60
Updating USHA+ Firmware from Windows 2000/XP/2003 60
Updating USHA+ Firmware from UNIX 61
Appendix C HTTP Security Control 62

Chapter 1 Welcome

Introduction administration

USHA+ – acronym for **U**PS **S**NMP and **H**TTP **A**gent. It can get hold of the status from and issue commands to the UPS. User can use SNMP managers or Web browsers to manage the UPS through the Ethernet.
USHA+ also provides shutdown programs for different operating systems. It issues a shutdown command for the events Mains failure, Battery low condition OR Remaining autonomy time, UPS overload, UPS over temperature and scheduled shutdown. All shutdown events are configurable by the user. The shutdown software will proceed to the automatic orderly shutdown to prevent the abnormal shut-off of the clients or servers.

USHA+ card is available as:

Card Type:
USHA+ Smart II – Internal card version with 10/100 auto-sense fast Ethernet.

Figure 1-1 USHA+ (Card Type)

USHA+ Resources

The USHA+ CD-ROM contains Quick Installation Guide, User Guide, MIB files and USHA+ Shutdown Software for various OS that you can use to configure the USHA+.

1. USHA+ Quick Installation Guide gives a short overview on how to install and configure a USHA+ using a Windows OS workstation.
2. USHA+ User Guide (this manual) gives more detail and information on installation and configuration of USHA+.
3. USHA+ provides online help that gives additional instructions for administering a USHA+.

USHA+ Package Contents

For USHA+ Smart II:

1. USHA+ Smart II card with mounting bracket
2. RJ45 to DB9 Female serial cable for USHA+ console operation
3. USHA+ CD-ROM containing the Shutdown Software for various OS, provided USHA+ MIB file for SNMP Network Management System (NMS), USHA+ Quick Installation Guide, USHA+ User Guide in electronic format.

Features

- **Network connection through RJ45 connector**

Allows connection of the UPS directly to the network through a RJ45 connector without using RS232 ports on the computer and without loading any individual UPS management software on the network server.

- **Network UPS management**

Allows remote management of the UPS from any workstation through Internet or Intranet.

- **Remote UPS monitoring via SNMP, HTTP and ModBus**

Allows monitoring of the UPS using USHA+ MIB (Management Information Base) - provided with USHA+, Internet Browser or ModBus.

- **Configure UPS and USHA+ functions from any client (password protected)**

Set UPS and USHA+ parameters from any SNMP management station or through Internet Browsers using HTTP forms and objects.

- **Keep event logs & metering data in flash memory**

Provides a history file of UPS power events, power quality, UPS status and battery condition.

- **Automatic shutdown**

The shutdown software included provides automatic orderly shutdown either pre-programmed by Administrator or for critical power events.

- **Multiple server shutdown**

The shutdown program will broadcast mains failure messages via an IP (Internet Protocol) packet and perform automatic shutdown on several servers, even on different operating systems.

… also

- **Notification of system administrator via SNMP Traps**
- **RTC supported**
- **Shutdown Watchdog enabled**
- **Telnet support for configuration**
- **BOOTP/DHCP supported**
- **Online configuration supported**
- **Standard UPS MIB (RFC1628) supported**
- **Enhanced HTTP security**
- **No restart needed for IP change**
- **System parameters/log write to flash memory simultaneously**
- **SSH and SSL supported**
- **WOL function supported**
- **Can connect an EMD (Environmental Monitoring Device) for monitoring temperature and humidity.**
- **NTP & ICMP supported**
- **SNMP V3 supported**

System Application

USHA+ is an interface between UPS and the network. It can obtain the status from a UPS and issue commands to it. USHA+ supports two kinds of protocol – SNMP and HTTP for user access. Through the SNMP protocol, NMS and Web Browser, the user can obtain the UPS status, issue commands to the UPS and configure USHA+ through the network.

USHA+ also provides shutdown software for various OS. The shutdown software that runs under various O.S. can link to USHA+ automatically through the network and communicate with USHA+ via a proprietary protocol. USHA+ will issue the shutdown command to the shutdown software in the event of Mains (input) failure, battery low and scheduled shutdown. Shutdown software will then proceed to the shutdown process in order to prevent the abnormal shutoff of host or server due to power events.

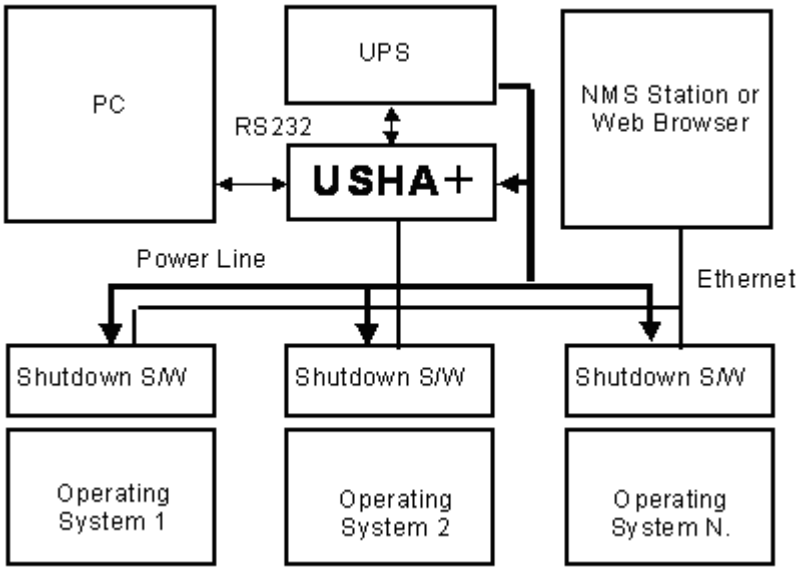


Figure 1-2 USHA+ System Application Diagram

Chapter 2 Connect USHA+ to the Network

What you need

To install USHA+ on a network and change the default configuration, you need a workstation running Microsoft Windows (2000, XP, 2003, Vista or later). If your network dynamically configures IP address, all you need is a workstation with a Web Browser.
There are two methods for setting the USHA+ configuration:

1. Set up the USHA+ through the serial port
2. Set up the USHA+ via a Web Browser

Hardware Installation

If you are using USHA+ (Card Type), refer to the section “Hardware preparation of USHA+ Card”.

Hardware Installation of USHA+ Card

1. Fasten the USHA+ card to USHA+ bracket.
2. Insert the USHA+ Card into the UPS slot.
   (See also the manual of the specific UPS for correct UPS slot installation; the procedure for Installing UPS slot interface may differ from one model of UPS to the next.)
3. Lock the screws of the USHA+ card bracket.

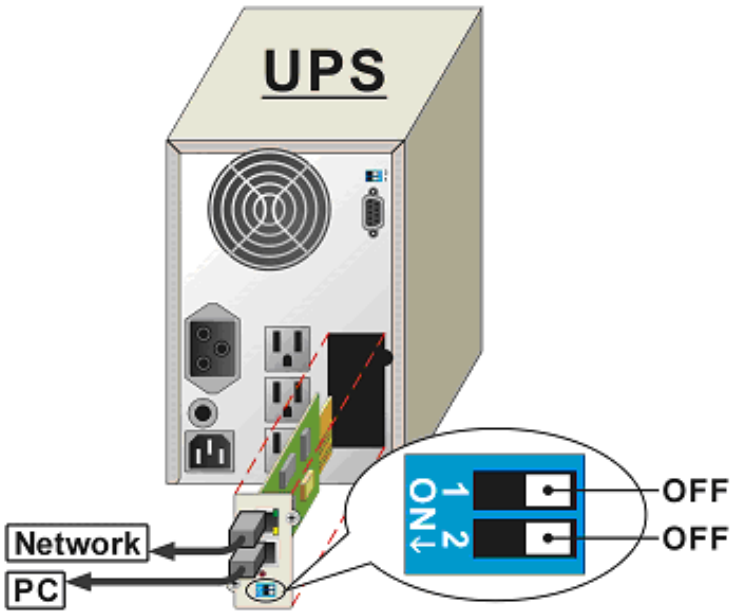


Figure 2-1 USHA+ card and UPS connection

Please refer to the next section for serial port configuration, or go to the last section of this chapter for configuration through a Web Browser.

USHA+ Configuration through the Serial Port

If you are using USHA+ card, refer to the section “Hardware preparation of USHA+ Card”.

Hardware Preparation of USHA+ Card

1. Operate on a workstation running Microsoft Windows 2000, XP, 2003 or later.
2. Using the RJ45 to DB9 female serial cable provided with the package, connect the USHA+ COM port and the COM port on the workstation. (See Figure 2-2)
3. Set both the DIP-switches of the USHA+ Card to OFF position (operating mode) for configuration.

Figure 2-2 Serial cable connection of USHA+ Card

Configuring USHA+

1. On a workstation running Microsoft Windows (2000, XP, 2003 or later,), start *HyperTerminal*, available on the accessory programs group. (See 2-3)

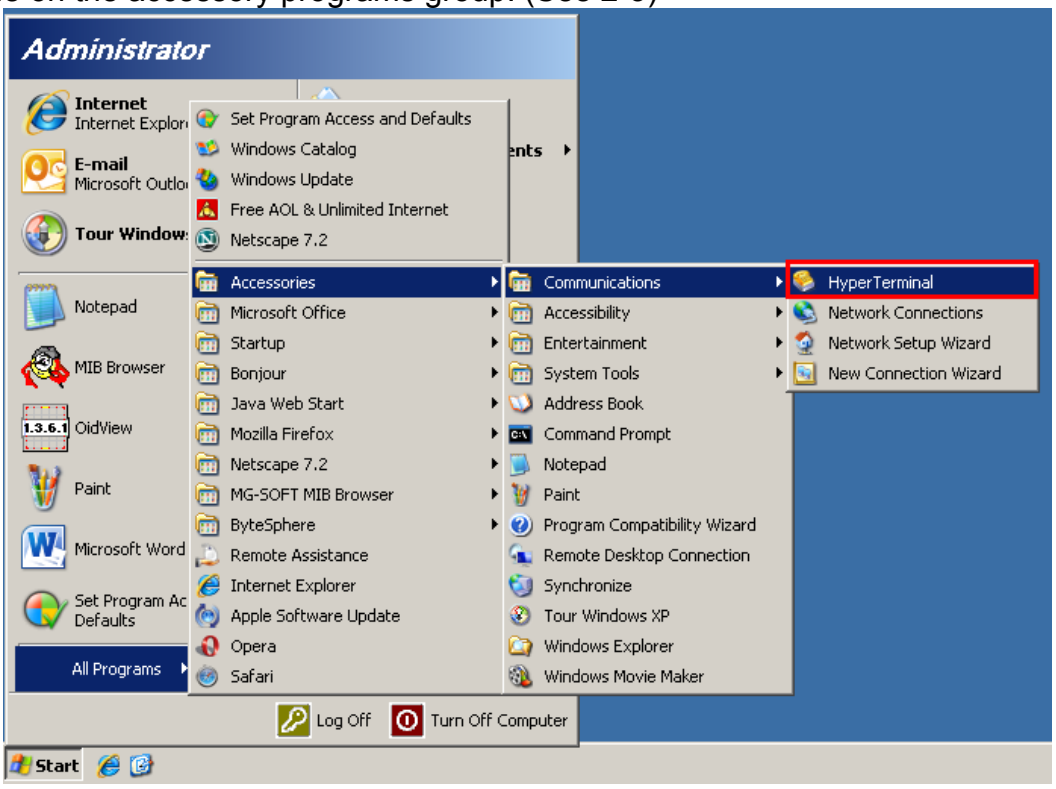


Figure 2-3 Hyper Terminal folders in the accessory programs group.

2. Enter a name and choose an icon for the connection. (See2-4)

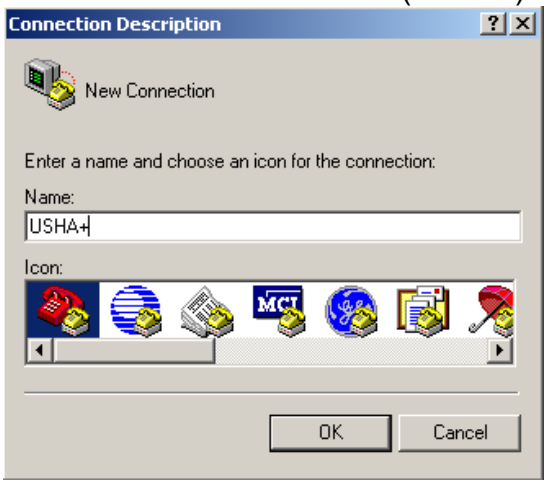


Figure 2-4 New Hyper Terminal connection.

3. Select direct COM port connection. (See 2-5.)

Figure 2-5 Select Direct to COM port connection.

4. Setup the COM port parameters - 9600 bps, 8 data bits, no parity, 1 stop bit and no flow control. (See 2-6.)

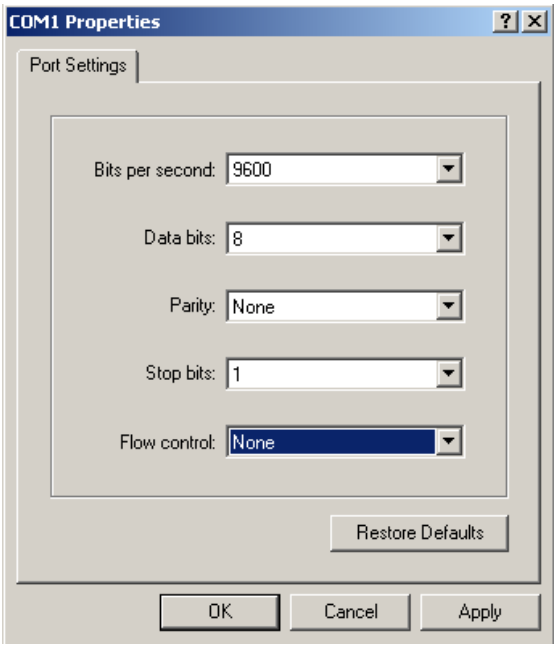


Figure 2-6 Setup of the COM port parameters.

5. If you are using USHA+ card, power on the UPS, press the reset button at the back of the USH device. Wait for USHA+ to boot up. Messages will then be displayed on the screen (See 2-7); afterwards. Type the password (default password is ***admin***). The USHA+ configuration utility main menu will be displayed on the screen.

```
+============================================================================+
|                        [ USHA+ Configuration Utility Main menu ]                                    |
+============================================================================+

Enter Password:
```

Figure 2-7 USHA+ Configuration Utility menu.

6. Select "*1*" to enter the USHA+ Configuration Menu(See 2-8).

```
+============================================================================+
|                        [ USHA+ Configuration Utility Main menu ]                                    |
+============================================================================+
    1. USHA+ Configuration
    2. UPS Parameters
    3. Access Control Table
    4. Trap Receiver Table
    5. SNMPv3 USM Table
    6. Reset Configuration To Default
    7. Restart USHA+
    0. Exit

Please Enter Your Choice => 1


+============================================================================+
|                              [ USHA+ Configuration Menu ]                                           |
+============================================================================+
    1. System Group
    2. Control Group
    3. Parameter Group
    4. Email Group
    5. Ping Group
    0. Return to previous menu

Please Enter Your Choice =>
```

Figure 2-8 USHA+ Configuration Menu.

Setting the IP Address, Gateway Address, Network Mask and Date/Time

From the configuration menu, press "*1*" to select this function and set the IP address, Gateway address and other group parameters. The definitions of these parameters are listed below (See 2-9).

```
+============================================================================+
|                          [ System Group Configuration Menu ]                                       |
+============================================================================+
        USHA+ Version       : USHA+ Pro II Card v1.00 (SN                    )
        Ethernet address    : 00 E0 D8 13 E2 A6
    1. Ip Address           : 192.168.68.171
    2. Gateway Address      : 192.168.1.254
    3. Network Mask         : 255.255.0.0
    4. Date and Time
    0. Return to previous menu

Please Enter Your Choice => 4


+============================================================================+
|                                [ Date and Time Menu ]                                              |
+============================================================================+
    1. System Date (dd/mm/yyyy)     : 30/04/2010
    2. System Time (hh:mm:ss)       : 09:36:12
    3. NTP Server                   : 0.0.0.0
```

```
   4. NTP Time Zone                  : 00:00
   5. Daylight Saving Time Control   : Disabled
   6. NTP Control                    : Disabled
   0. Return to previous menu

Please Enter Your Choice =>
```

Figure 2-9 Setting the USHA+ local network addressing parameters, date and time.

No.	Function	Description	Example/Remark
1.	IP Address	The USHA+ IP address.	192.168.1.100
2.	Gateway Address	The network default gateway.	192.168.1.254
3.	Network Mask	The sub-net mask setting.	255.255.255.0
4.	Date and Time	Setting Date and Time in this group	

No.	Function	Description	Example/Remark
1.	System Date	USHA+ internal Date (dd/mm/yyyy)	30/04/2010
2.	System Time	USHA+ internal Time (hh:mm:ss)	06:30:23
3.	NTP Server	Setting NTP time server	0.0.0.0
4.	NTP Time Zone	Setting NTP time Zone as +/-hh:mm	00:00
5.	Daylight Saving Time Control	Enable/disable daylight saving time	Disabled
6.	NTP Control	Enable/disable NTP time server	Disabled

After completing these settings, press “0” to return to the configuration menu.

Control Group Setting

From the configuration menu, press “2” to modify the access password and enabled/disabled status of the available network protocols (See 2-10).
See **Appendix C** HTTP Security Control for detail.

```
+==============================================================================+
|                        [ Control Group Configuration Menu ]                  |
+==============================================================================+
   1. HTTP Login Username          : USHA+
   2. Community Read-Only          : public
   3. Community Read/Write         : *
   4. BOOTP/DHCP Control           : Disabled
   5. TFTP/HTTP Upgrade Control    : Enabled
   6. PING Echo Control            : Enabled
   7. Telnet Control
   8. HTTP Control
   9. SNMP Control
   A. SMTP Port                    : 25
   B. SSH Control
   0. Return to previous menu

Please Enter Your Choice =>
```

Figure 2-10 Setting the passwords and enabling the network protocols

No.	Function	Description	Example/Remark
1.	HTTP Login Name	HTTP access login string	“USHA+”
2.	Community Read-Only	General password for read-only access	“public”
3.	Community Read/Write	Administrator password for read and write access	“admin”
4.	BOOTP/DHCP Control	Enable/disable the BOOTP/DHCP protocols	Enabled
5.	TFTP Upgrade Control	Enable/disable the TFTP protocol for firmware upgrades through the local network	Enabled
6.	PING Echo Control	Enable/disable the PING echo	Enabled
7.	Telnet Control	Enable/disable the TELNET protocol and change port number	Enabled, 23port
8.	HTTP Control	Enable login and password request for HTTP access. Could change HTTP port number	Enabled, 80port
9.	SNMP Control	Enable/disable the SNMP service or change	Enabled, 161port

		UDP port number, change SNMP version and Trap repeat time control	SNMPv1, 1
A.	SMTP Port	Change port number	25port
B.	SSH Control	Enable/disable the SSH protocol and change port number	Enabled, 22port

After completing these settings, press “0” to return to the configuration menu.

Parameter Group Setting

From the configuration menu press “3” to modify the SNMP identification information. (See 2-11)

```
+================================================================================+
|                          [ Parameter Group Configuration Menu ]                |
+================================================================================+
    1. sysContact               : Technical Support Team
    2. sysName                  : USHA+
    3. System Location          :
    4. EMD Configuration        : Auto
    5. Temperature Unit         : Celsius
    0. Return to previous menu

Please Enter Your Choice =>
```

Figure 2-11 Setting the SNMP identification information and the UPS data read frequency.

No	Function	Description	Example/Remark
1.	SysContact	Alphanumeric string	Technical Support Team
2.	SysName	Alphanumeric string	USHA+
3.	SystemLocation	Alphanumeric string	
4.	EMD Configuration	Disabled / Auto EMD function	Disabled
5.	Temperature Unit	Change temperature Unit to Celsius or Fahrenheit	Celsius

After completing these settings, press “0” to return to the configuration menu.

Email Group Setting

From the configuration menu, press “4” to modify the Email configuration. (See2-12)

```
+================================================================================+
|                          [ Email Group Configuration Menu ]                    |
+================================================================================+
    1. Mail Server                  : mail.server.com
    2. User Account                 : USHA+
    3. User Password                :
    4. Sender's Email Address       : danielliu@server.com
    5. Mail Subject Prefix          : 171
    6. DNS IP Address               : 192.168.200.87
    7. Daily Status Report          : 00:00
    8. Mail Receivers
    9. Test Email Configuration
    0. Return to previous menu

Please Enter Your Choice =>
```

Figure 2-12 Setting the Email information

No.	Function	Description	Example/Remark
1.	Mail Server	Setting Email server to receive the mail form USHA+	Mail.server.com
2.	User Account	User account for the mail server	USHA+
3.	User Password	The password of the mail server	*
4.	Sender’s Email Address	The Email Address of sender	danielliu@server.com

5.	Mail Subject Prefix	Set subject prefix	171
6.	DNS IP Address	Set DNS IP address	192.168.200.87
7.	Daily Status Report	Setting the time of daily status report (hh:mm)	00:00
8.	Mail Receivers	Set the mail account, mail type and event level in mail receiver table	
9.	Test Email Configuration	Set yes/no to send a mail test to the mail account which set in mail receiver table	

After completing these settings, press “0” to return to the configuration menu.

UPS Information Group Setting

From the UPS Parameters / UPS Information Group press “1” to see the UPS information. (See 2-13)

```
+================================================================================+
|                                [ UPS Information Group ]                       |
+================================================================================+
    1. UPS Manufacturer              : SWITZERLAND0789
    2. UPS Model Name                : 30 kVA
    3. UPS Identification Name       : 601020710
    0. Return to previous menu

Please Enter Your Choice =>
```

Figure 2-13 UPS Information Group

No	Function	Description	Example/Remark
1.	UPS Manufacture	Showing the UPS Manufacture or setting this value by user	SWITZERLAND0789
2.	UPS Model Name	Showing the UPS Model Name or setting this value by user	30 kVA
3.	UPS Identification Name	Alphanumeric string	601020710

After completing these settings, press “0” to return to the configuration menu.

UPS Rating Group

Fill in the UPS proper value (different UPS may has different low/full voltage) to show correct battery capacity and output VA on monitoring page.

From the UPS Parameters / UPS Rating Group press “2” to set the UPS rating value. (See 2-14)

```
+=============================================================================+
|                              [ UPS Rating Group ]                           |
+=============================================================================+
        Nominal Input Voltage (V)            : 230
        Nominal Input Frequency (F)          : 50.0
        Nominal Output Voltage (V)           : 230
        Nominal Output Frequency (F)         : 50.0
        Nominal Output Power(kVA)            : 60.0
        Nominal Output Power(kW)             : 48.0
        Nominal Low Battery Time [m]         : 0
    1. Audible Alarm (Buzzer)                : Disabled
    0. Return to previous menu

Please Enter Your Choice =>
```

Figure 2-14 UPS Rating Group

No	Function	Description	Example/Remark
	Nominal Input Voltage (V)	Showing the UPS Nominal Input Voltage	230
	Nominal Input Frequency (F)	Showing the UPS Nominal Input Frequency	50.0
	Nominal Output Voltage (V)	Showing the UPS Nominal Output Voltage	230
	Nominal Output Frequency (F)	Showing the UPS Nominal Output Frequency	50.0
	Nominal Output Power(kVA)	Showing the UPS Nominal Output Power(kVA)	60.0
	Nominal Output Power(kW)	Showing the UPS Nominal Output Power(kW)	48.0
	Nominal Low Battery Time [m]	Showing the UPS Nominal Low Battery Time	0
1.	Audible Alarm (Buzzer)	Change Disable / Enable / Muted / Disabled untiled	Disabled

After completing these settings, press “0” to return to the configuration menu.

Access Control Table Setting

If you wish to use a workstation with SNMP Manager installed, or if you wish to set more restrictive USHA+ access, you can use the access table to add the IP address of the PC’s on which you wish to modify the access permissions (See 2-15).

Note: The configuration of Access Control Table is configured for SNMP and HTTP Network Management. Access through TELNET or RS-232 is permitted only when using the “Community Read/Write” password in *Control Group*.

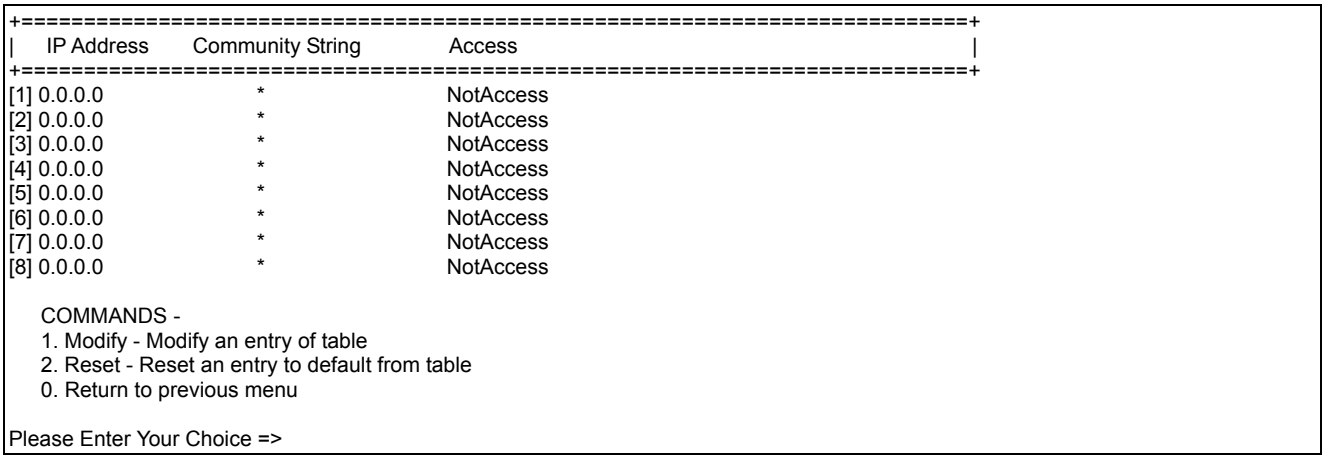

| IP Address Community String Access |
[1] 0.0.0.0 * NotAccess
[2] 0.0.0.0 * NotAccess
[3] 0.0.0.0 * NotAccess
[4] 0.0.0.0 * NotAccess
[5] 0.0.0.0 * NotAccess
[6] 0.0.0.0 * NotAccess
[7] 0.0.0.0 * NotAccess
[8] 0.0.0.0 * NotAccess
COMMANDS -
1. Modify - Modify an entry of table
2. Reset - Reset an entry to default from table
0. Return to previous menu
Please Enter Your Choice =>

Figure 2-15 Access Control Table

Press key “1” to modify the data on a line. Press “2” to delete all the data on a line.

NOTE1: The community strings entered in the Community String fields are visible only in the RS-232 connection. The TELNET connection does not display the string. An asterisk “*” will be shown in the field.

NOTE2: If a “NotAccess” access right is associated with an IP address, the associate workstation will not be able to display any information regarding the USHA+, even if the Community Read-Only string is entered.

Setting Trap Receivers

If you want to use a PC and perform the SNMP manager ‘trap’ function in order to manage UPS through USHA+, the IP address of the PC must be added to the USHA+ list. Press “1” to modify the data on a line. Press “2” to delete all the data on a line. (See 2-16)

Note: The Set Trap Receivers configuration is used only for SNMP Network Manager.

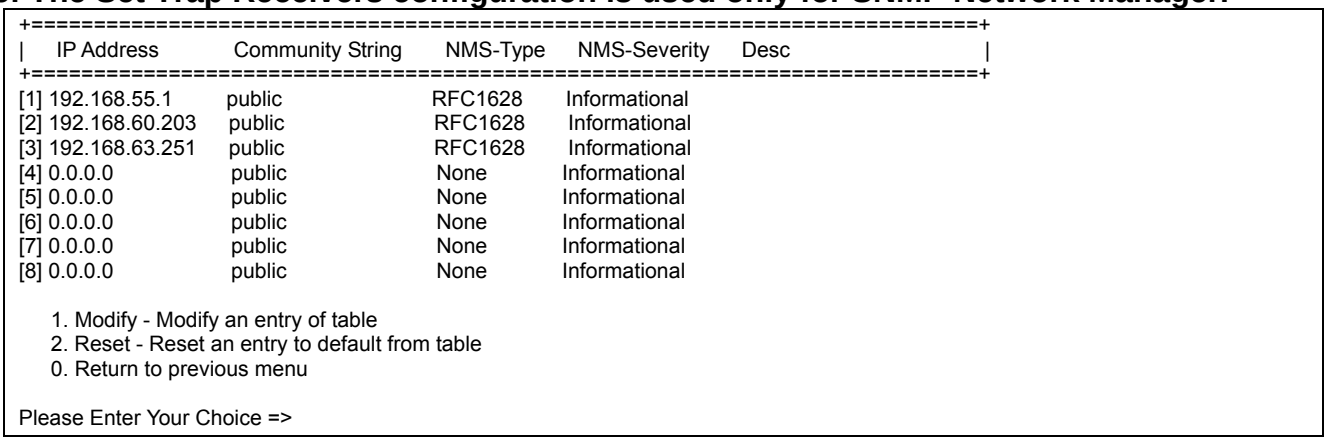
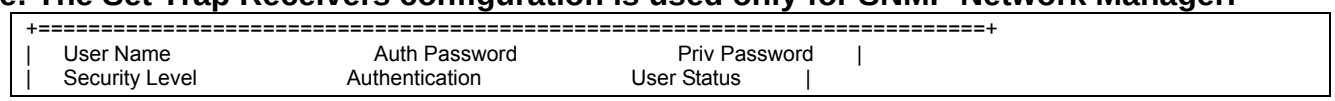

| IP Address Community String NMS-Type NMS-Severity Desc |
[1] 192.168.55.1 public RFC1628 Informational
[2] 192.168.60.203 public RFC1628 Informational
[3] 192.168.63.251 public RFC1628 Informational
[4] 0.0.0.0 public None Informational
[5] 0.0.0.0 public None Informational
[6] 0.0.0.0 public None Informational
[7] 0.0.0.0 public None Informational
[8] 0.0.0.0 public None Informational
1. Modify - Modify an entry of table
2. Reset - Reset an entry to default from table
0. Return to previous menu
Please Enter Your Choice =>

Figure 2-16 Setting Trap Receivers.

Setting SNMPv3 USM Table

If you want to use SNMPv3 function in order to set UPS through USHA+. Press “1” to modify the data on a line. Press “2” to delete all the data on a line. (See 2-17)

Note: The Set Trap Receivers configuration is used only for SNMP Network Manager.



```
+=============================================================================+
[1]
     noAuthNoPriv                HMAC-MD5                    Not Use

[2]
     noAuthNoPriv                HMAC-MD5                    Not Use

[3]
     noAuthNoPriv                HMAC-MD5                    Not Use

[4]
     noAuthNoPriv                HMAC-MD5                    Not Use


    COMMANDS -
    1. Modify - Modify an entry of table
    2. Reset - Reset an entry to default from table
    0. Return to previous menu

Please Enter Your Choice =>
```

Figure 2-17 Setting SNMPv3 USM Table.

Back to Main Menu

Press “0” to return to the main menu.

End of USHA+ console Configuration

After configuration was complete, press “0” to ending the console connection. Reboot USHA+ was not necessary, unless you press “7” to ending the console connection and force USHA+ reboot again.

As so far, USHA+ initialisation was completed.

NOTE: If you want USHA+ to load the factory configuration default, you may press “6” to Reset Configuration To Default.

USHA+ Configuration through TELNET command

1. Make sure that you have a TCP/IP network already installed.
2. Run command shell (i.e. Windows MS-DOS prompt).
3. USHA+ will initially try to acquire an IP address from the DHCP network service, if exist, on the network.
4. Type “Telnet <*IP address obtained from DHCP*>” and press enter. Proceed to Step 7.
5. If there is no DHCP network service on the network, contact your network administrator to get an IP address for you workstation that has the same network’s address as the USHA+’s default IP address. ***The default* IP address of USHA+ is 172.17.XXX.ZZZ where XXX and ZZZ is the last two pairs of the MAC address of USHA+ in decimal.**
6. Type “Telnet 172.17.XXX.ZZZ” command and press enter.
7. From this point, the configuration procedures are the same as the configuration via RS-232.

USHA+ Configuration through a Web Browser

If you are using USHA+ card, refer to the section entitled “Hardware preparation of USHA+ Card”.

Hardware Preparation of USHA+ card

1. Procure a workstation with Ethernet card on which a Web Browser is installed.
2. Connect the network cable (twisted-pair cable) from the workstation’s LAN port to an active 10/100-hub port.
3. Connect another network cable (twisted-pair cable) from the LAN port of the USHA+ card to an active 10/100-hub port. (See 2-18).
4. Set the USHA+ card DIP-switches, the switches 1 and 2 are OFF.
5. Turn on the UPS and wait for USHA+ card to boot up (around 90 seconds).

Figure 2-18
Connecting the Ethernet cable from the LAN port of USHA+ Card.

Adjust the network routing table in your workstation

Normally, the first time you use USHA+, your workstation is unable to communicate to USHA+ since they are not in the same IP **subnet**. However, you may use “route add” command to adjust the network routing table in your workstation in order to be able to communicate to USHA+ via Network and configure it. (If the IP address of the machine is in the same subnet as USHA+, then no need to modify the routing table; just run the Web Browser).

1. Operate on a workstation (Microsoft Windows 95, 98, ME, NT4.0, 2000, XP, 2003 or later installed), configured with the TCP/IP protocol,.
2. Enter the following command to add the routing condition:

Route add USHA+_ip_address workstation_ip_address

For instance, assuming that the IP address of USHA+ is 172.17.10.21 and the IP address of the workstation is 210.67.192.147:
route add 172.17.10.21 210.67.192.147

Note1: Default IP address of USHA+ is 172.17.XXX.ZZZ where XXX and ZZZ is the last two pairs of the MAC address of USHA+ in decimal.
For example: Mac address = 00 E0 D8 04 0A 15 then the default IP = 172.17.10.21

Note2: See the Windows manual for detailed information on how to add a routing condition to the PC.

Running the Web Browser (Netscape or Internet Explorer)

1. Make sure that you have a TCP/IP network already installed.
2. If there is no DHCP network service on the network, contact your network administrator to get an IP address for you workstation that has the same network's address as the USHA+'s default IP address. ***The default* IP address of USHA+ is 172.17.XXX.ZZZ where XXX and ZZZ is the last two pairs of the MAC address of USHA+ in decimal.**
3. Start your Web Browser.

Enter the URL "http:\\172.17.XXX.ZZZ" in the address box where XXX and ZZZ is the last two pairs of the MAC address of USHA+ in decimal, The USHA+ home page will be shown on the screen. (See 2-19)

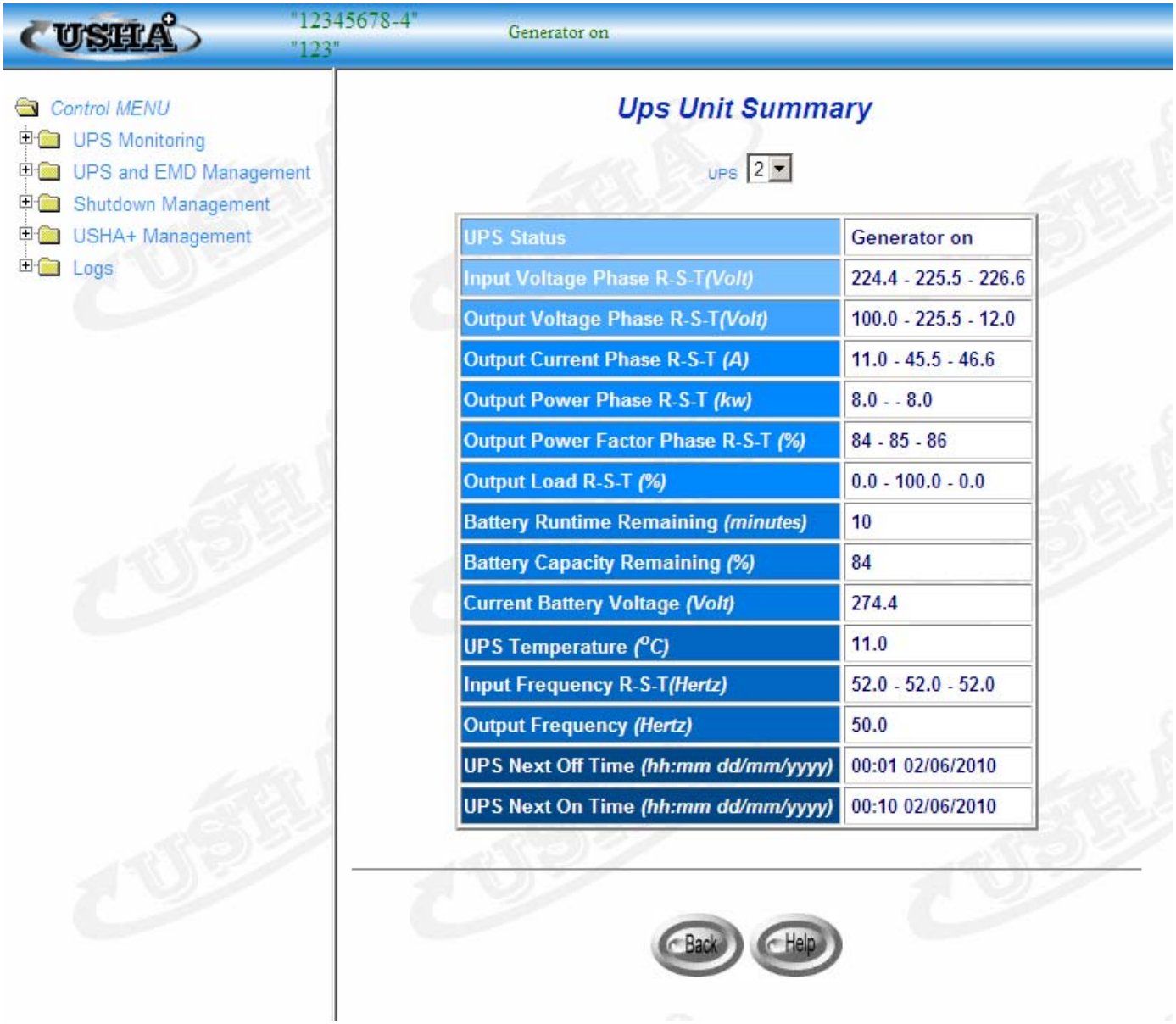

USHA
"12345678-4"
"123"
Generator on
Control MENU
UPS Monitoring
UPS and EMD Management
Shutdown Management
USHA+ Management
Logs
Ups Unit Summary
UPS 2
UPS Status | Generator on
Input Voltage Phase R-S-T(Volt) | 224.4 - 225.5 - 226.6
Output Voltage Phase R-S-T(Volt) | 100.0 - 225.5 - 12.0
Output Current Phase R-S-T (A) | 11.0 - 45.5 - 46.6
Output Power Phase R-S-T (kw) | 8.0 - - 8.0
Output Power Factor Phase R-S-T (%) | 84 - 85 - 86
Output Load R-S-T (%) | 0.0 - 100.0 - 0.0
Battery Runtime Remaining (minutes) | 10
Battery Capacity Remaining (%) | 84
Current Battery Voltage (Volt) | 274.4
UPS Temperature (°C) | 11.0
Input Frequency R-S-T(Hertz) | 52.0 - 52.0 - 52.0
Output Frequency (Hertz) | 50.0
UPS Next Off Time (hh:mm dd/mm/yyyy) | 00:01 02/06/2010
UPS Next On Time (hh:mm dd/mm/yyyy) | 00:10 02/06/2010
Back
Help

Figure 2-19 USHA+ home page screen: UPS Unit Summary (module number 3 for parallel systems).

USHA+ Initial Configuration

1. Select *USHA+ Configuration* from the *USHA+ Management* of the main menu to setup the network configuration parameters (See 2-20).
2. Click the *Become Administrator* button at the bottom of the screen. Enter ***USHA+*** as the login name and ***admin*** as the password. (Case sensitive)
3. Enter the USHA+ IP address.
4. Enter the USHA+ Gateway Address in the network.
5. Enter the USHA+ Subnet Mask of the network.
6. Click the *Set Values* to save the settings.
7. Select *Date and Time* from the *USHA+ Management* of the main menu.
8. Enter the IP address of the *Primary Time Server* and *Secondary Time Server* in the network or let USHA+ read the date and time information from the PC or, as last option, manually define the date and time.
9. Select *Set Values* to save the date and time settings.
10. Select *USHA+ Network Protocols* to enable or disable the network protocols based on your requirements (See 2-21).
11. Select *Apply* to save the changes.

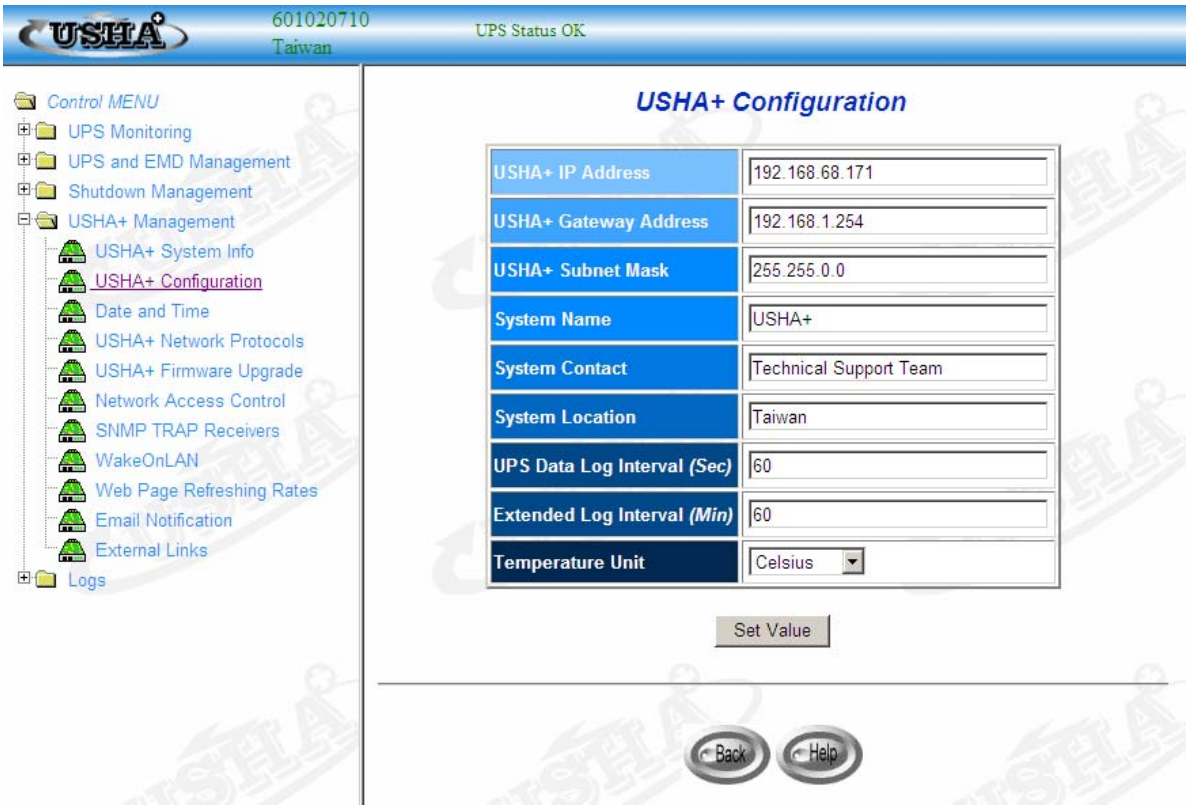


Figure 2-20 USHA+ initial configuration page screen.

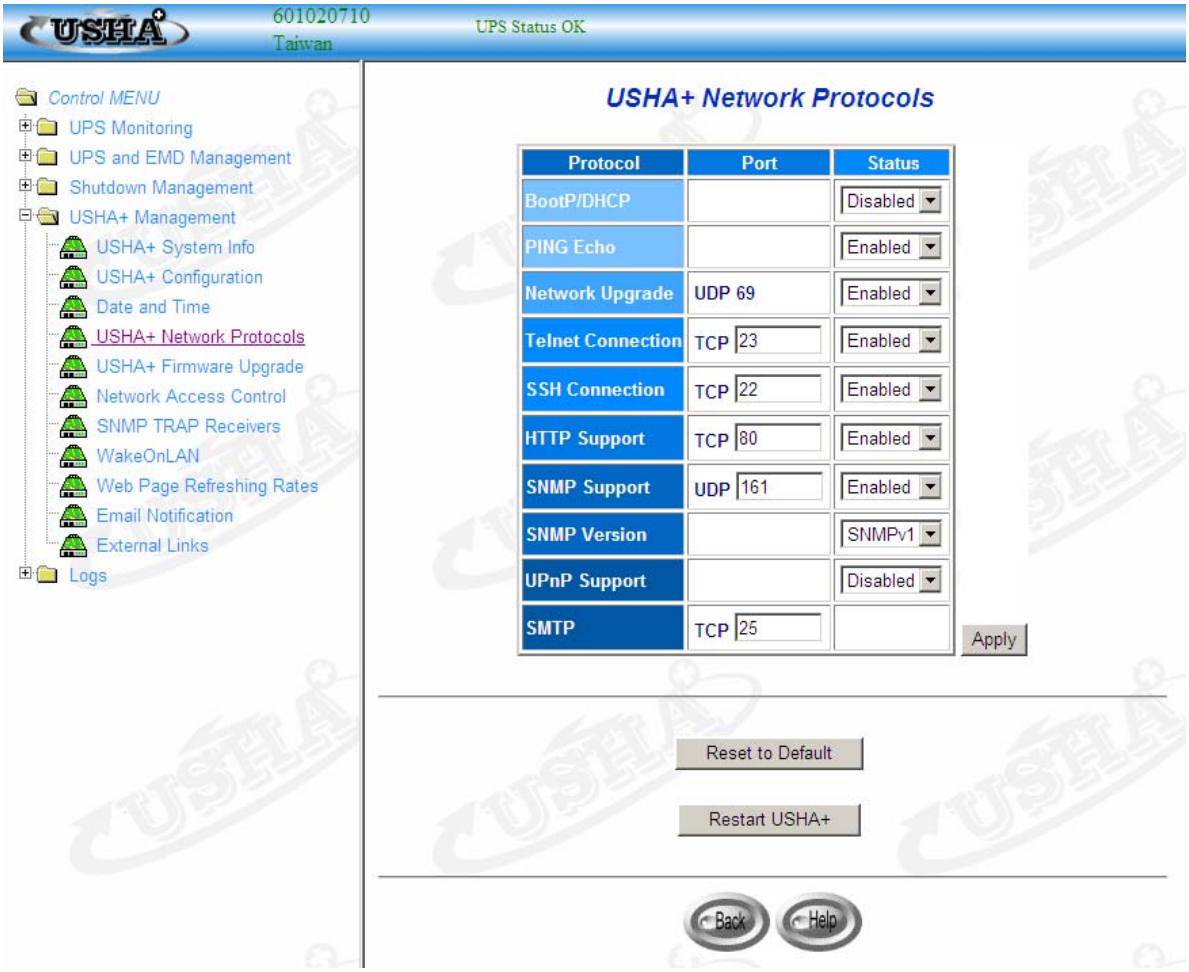


Figure 2-21 USHA+ Network Protocols page.

NOTE: on this "Protocol Page" you also have the RESTART button, which is visible when becoming administrator

Chapter 3 Managing USHA+ via Web Browser

Note: If you do not add the IP address of the workstation to the *Access Control Table* (via RS232 or Telnet) or the *SNMP/HTTP Access Control* (via Web Browser) in USHA+, you can only view the UPS status; it will not be able to perform any configuration on USHA+.

Displaying the USHA+ Home Page

1. Start your Web Browser and enter USHA+ IP address
2. The USHA+ home page will be shown on the screen.
3. Select the help icon located at the bottom of each page for a detail description of each item.

UPS Monitoring Folder

This main menu contains all the measurements and data read from the UPS.
All the sub-menus are read-only for all users; write-mode access is not allowed.

Global Parallel UPS System Summary

This page is only available for parallel UPS Systems and shows the major UPS figures, after parallel handling. With "Parallel Handling" we mean the calculation of values (measurements, alarm and states), which represent for the whole parallel system. For instance when each UPS module exhibit a different battery autonomy, the Parallel Handling process calculates a global value which is valid for the whole system and for the present conditions (load, operating mode of each module, defective modules, currently outstanding alarms)

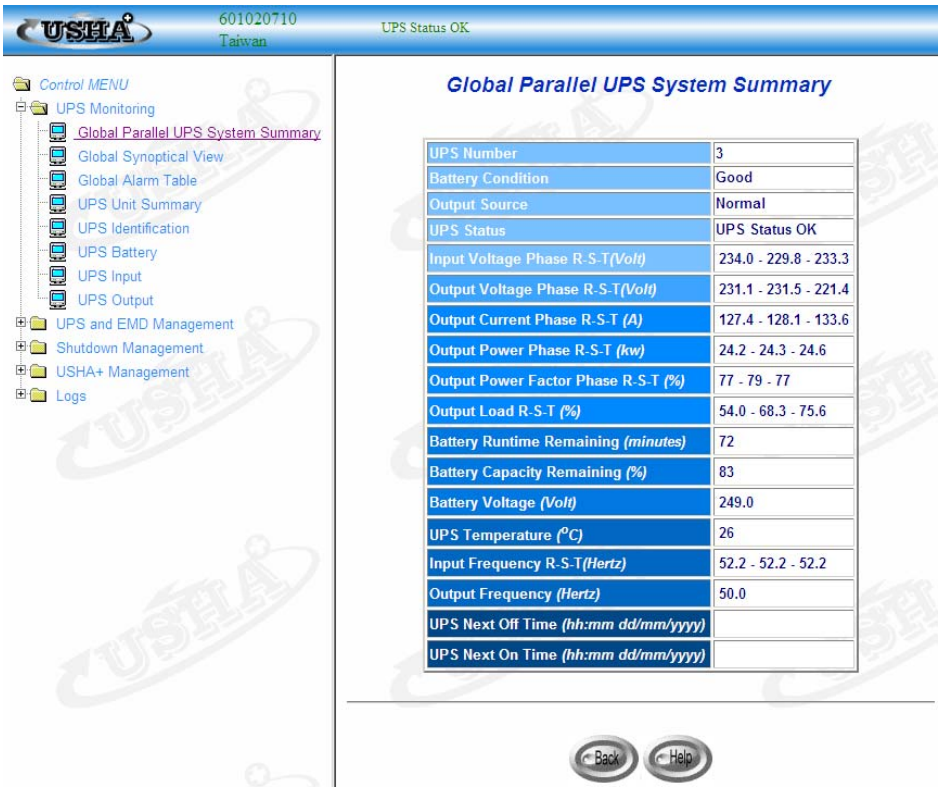

601020710
Taiwan
UPS Status OK
Control MENU
UPS Monitoring
Global Parallel UPS System Summary
Global Synoptical View
Global Alarm Table
UPS Unit Summary
UPS Identification
UPS Battery
UPS Input
UPS Output
UPS and EMD Management
Shutdown Management
USHA+ Management
Logs
Global Parallel UPS System Summary
UPS Number 3
Battery Condition Good
Output Source Normal
UPS Status UPS Status OK
Input Voltage Phase R-S-T(Volt) 234.0 - 229.8 - 233.3
Output Voltage Phase R-S-T(Volt) 231.1 - 231.5 - 221.4
Output Current Phase R-S-T (A) 127.4 - 128.1 - 133.6
Output Power Phase R-S-T (kw) 24.2 - 24.3 - 24.6
Output Power Factor Phase R-S-T (%) 77 - 79 - 77
Output Load R-S-T (%) 54.0 - 68.3 - 75.6
Battery Runtime Remaining (minutes) 72
Battery Capacity Remaining (%) 83
Battery Voltage (Volt) 249.0
UPS Temperature (°C) 26
Input Frequency R-S-T(Hertz) 52.2 - 52.2 - 52.2
Output Frequency (Hertz) 50.0
UPS Next Off Time (hh:mm dd/mm/yyyy)
UPS Next On Time (hh:mm dd/mm/yyyy)
Back
Help

Figure 3-1 Global Parallel UPS System Summary

Global Synoptical View

The status of the UPS or of the Parallel System, at a glance, in graphical format. The Synoptical

view, by red coloring the graphical objects, let you immediately recognize any abnormal situation.

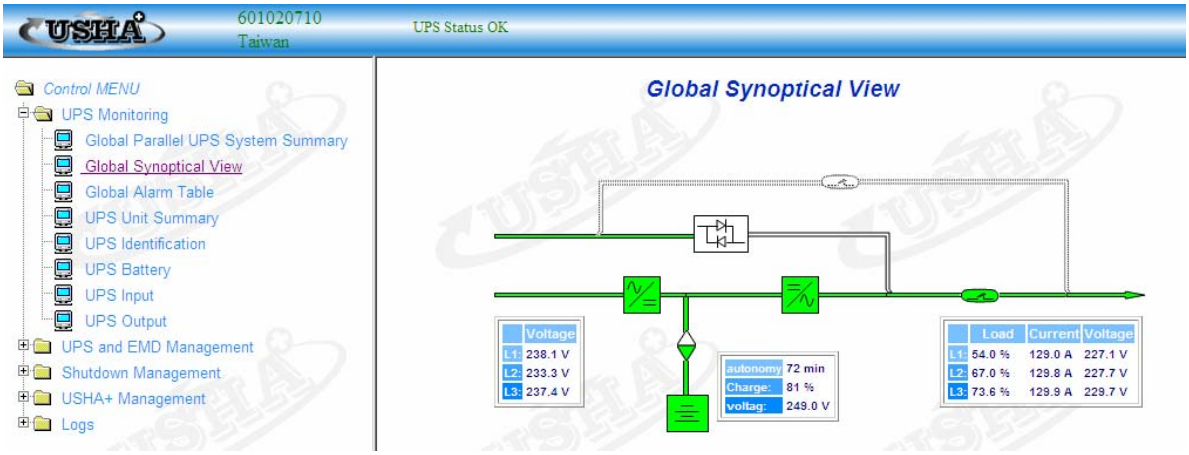


Figure 3-2 Global Synoptical View

Global Alarm Table

Each pending alarm on the UPS System is displayed on this page, showing the number of currently pending alarms, and a table with an entry for each alarm, with following entries:

Alarm ID	a sequential number
Alarm UPS ID	the UPS module number having the alarm. This is significant for parallel Systems having more than one UPS units. When the entry displays "Global" then the alarm is valid for the whole parallel systems (meaning that the alarm affect not just redundant units, and therefore has to be considered seriously)
Alarm Time	the date and time at occurrence of the alarm
Alarm description	a short textual description of the alarm

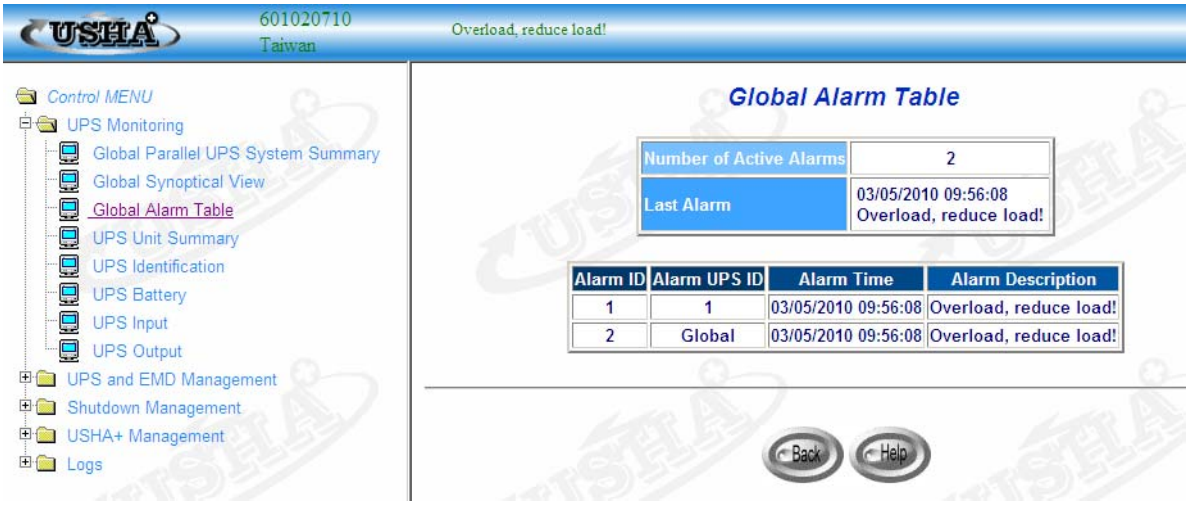


Figure 3-3 Global Alarm Table

UPS Unit Summary

This page gives a snapshot of all the principal UPS parameters as shown in Figure 3-4. The page will refresh automatically. To set the refresh time, select the menu *USHA+ Management – Web Page Refreshing Rate*. For parallel UPS systems, you may select the module number you would like to see.

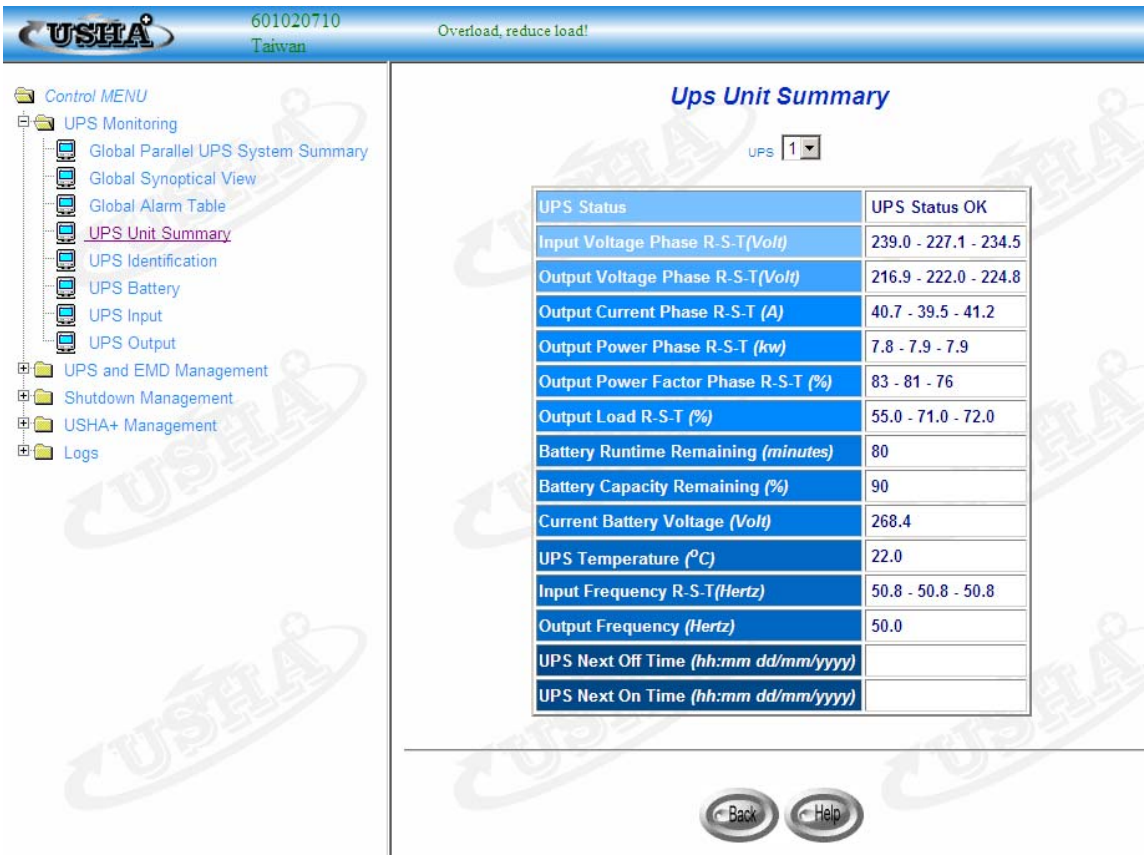

601020710
Taiwan
Overload, reduce load!
Control MENU
UPS Monitoring
Global Parallel UPS System Summary
Global Synoptical View
Global Alarm Table
UPS Unit Summary
UPS Identification
UPS Battery
UPS Input
UPS Output
UPS and EMD Management
Shutdown Management
USHA+ Management
Logs
Ups Unit Summary
UPS 1
UPS Status | UPS Status OK
Input Voltage Phase R-S-T(Volt) | 239.0 - 227.1 - 234.5
Output Voltage Phase R-S-T(Volt) | 216.9 - 222.0 - 224.8
Output Current Phase R-S-T (A) | 40.7 - 39.5 - 41.2
Output Power Phase R-S-T (kw) | 7.8 - 7.9 - 7.9
Output Power Factor Phase R-S-T (%) | 83 - 81 - 76
Output Load R-S-T (%) | 55.0 - 71.0 - 72.0
Battery Runtime Remaining (minutes) | 80
Battery Capacity Remaining (%) | 90
Current Battery Voltage (Volt) | 268.4
UPS Temperature (°C) | 22.0
Input Frequency R-S-T(Hertz) | 50.8 - 50.8 - 50.8
Output Frequency (Hertz) | 50.0
UPS Next Off Time (hh:mm dd/mm/yyyy) |
UPS Next On Time (hh:mm dd/mm/yyyy) |
Back
Help

Figure 3-4 UPS Unit Summary

UPS Identification

This page displays the basic UPS identification, like the manufacturer, the UPS model, the firmware revision. For parallel systems it is possible to select the module number from which to get this information, although you will probably get the same information from all modules.

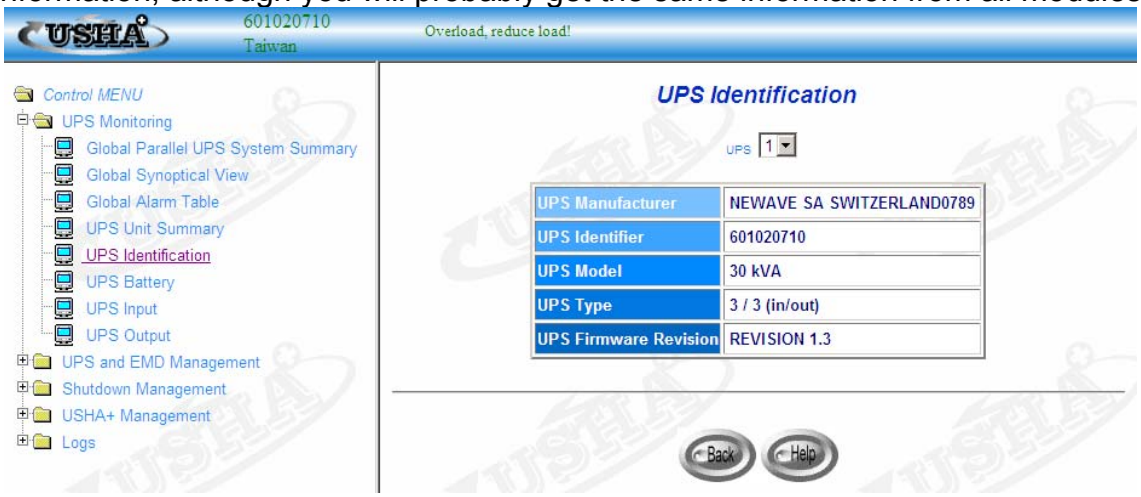


Figure 3-5 UPS Identification.

UPS Battery

This page displays the battery parameters which are currently effective on the UPS Module. For Parallel System you may select from which module you would like to get the measurements.

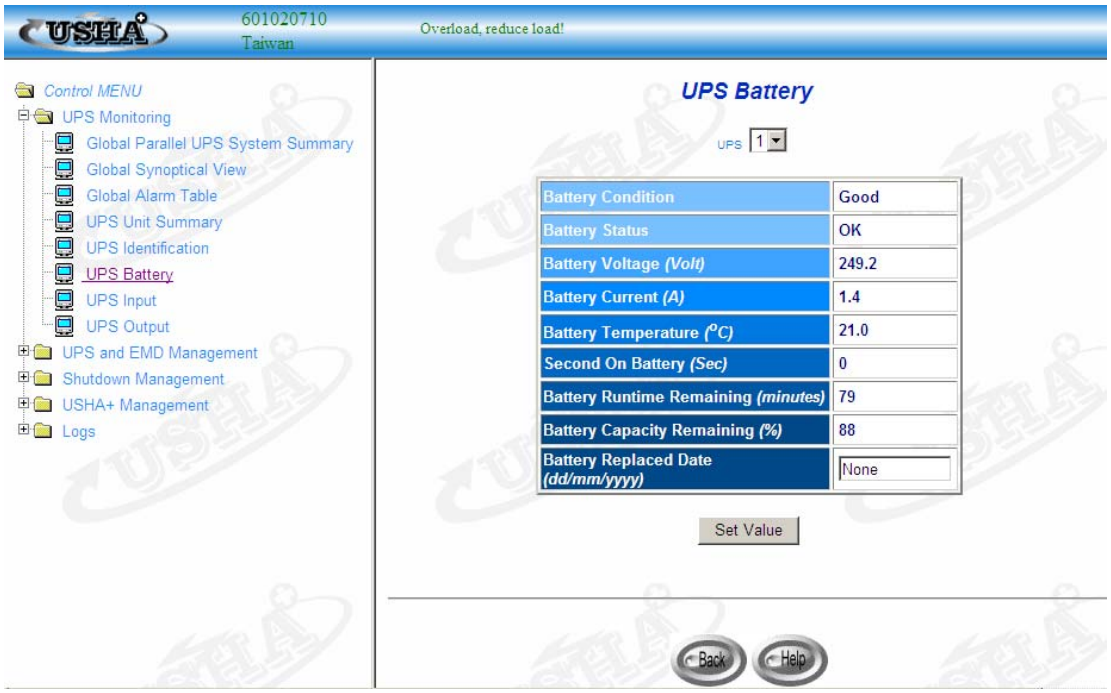


Figure 3-6 UPS Battery

UPS Input

On this page you have all the parameters from UPS input lines (Mains). You have the main input on the rectifier and on the bypass. For Parallel System you may select from which module you would like to get the measurements.

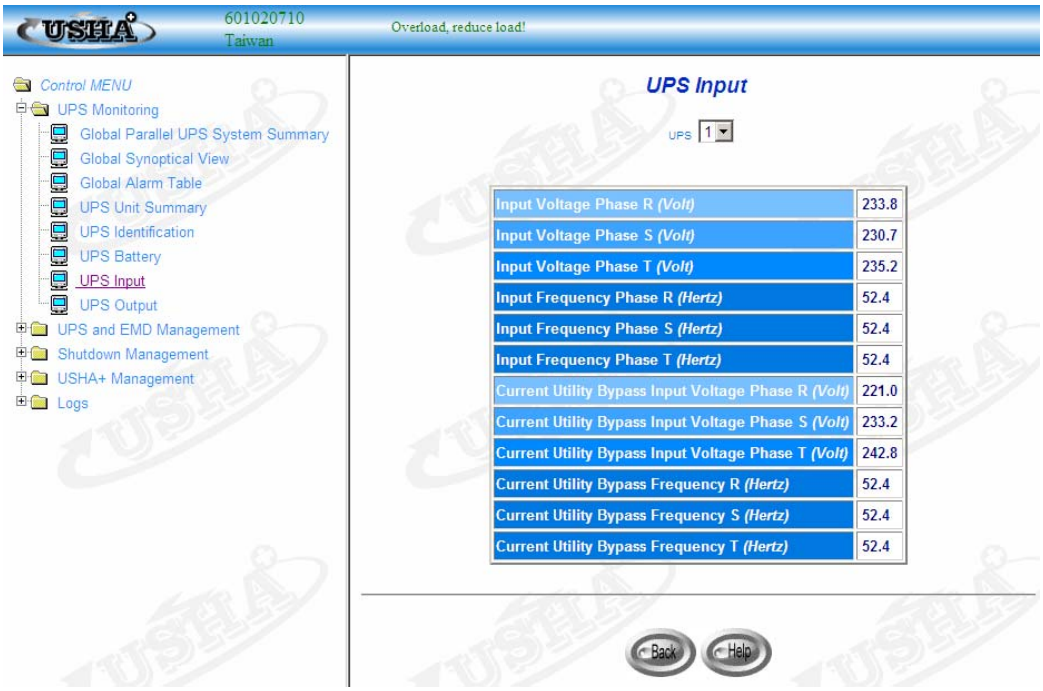


Figure 3-7 UPS Input

UPS Output

On this page you have the output parameters of the UPS. For Parallel System you may select

from which module you would like to get the measurements.

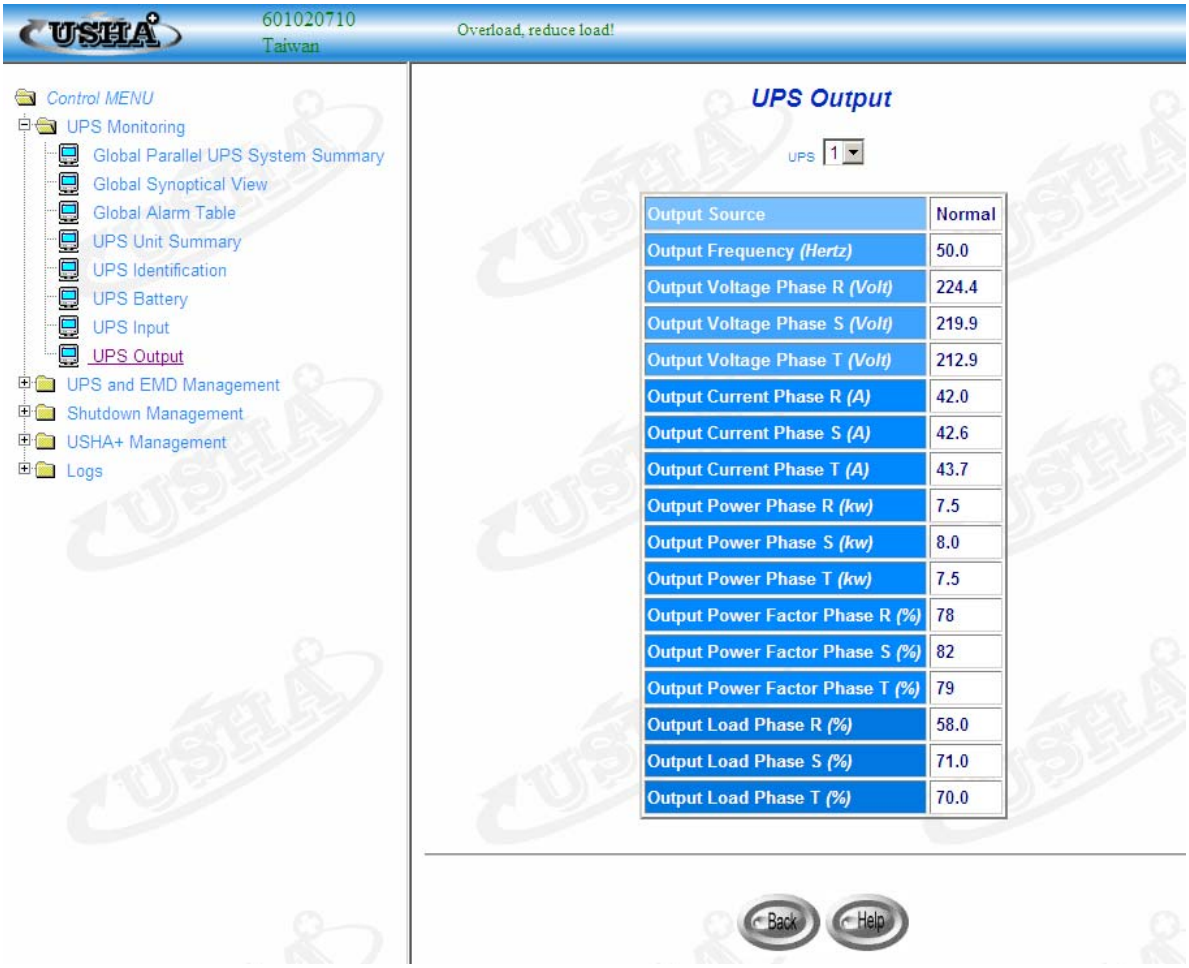


Figure 3-8 UPS Output

UPS and EMD Management

This folder contains the menus for the configuration of the UPS and the EMD (Environmental Monitoring Device), and for setting up the battery test. All the sub-menus are read-only except for the administrator which has access in read/write mode.

UPS Global Configuration

On this page you may check the nominal configuration values of the UPS and modify some of them. In order to apply your modification you have to become administrator and then, after having changed the relevant values, click on the "Set Value" button. All the configured values are then transmitted to the UPS.

Following values can be modified (read/write):

Nominal Low Battery Time — The remaining battery autonomy time when the UPS issues a "Low Battery" alarm

Audible Alarm (Buzzer) — Disabled = the buzzer will never sound
Enabled = normal operation. The buzzer will start sound on each new generated alarm, until muted via UPS panel or USHA+ command (see next value)
Muted = a currently sounding buzzer is temporarily muted until a new alarm occur.

NOTE: - on a parallel UPS Systems, the parameters are sent to all ups modules. This is the meaning of the word "global".

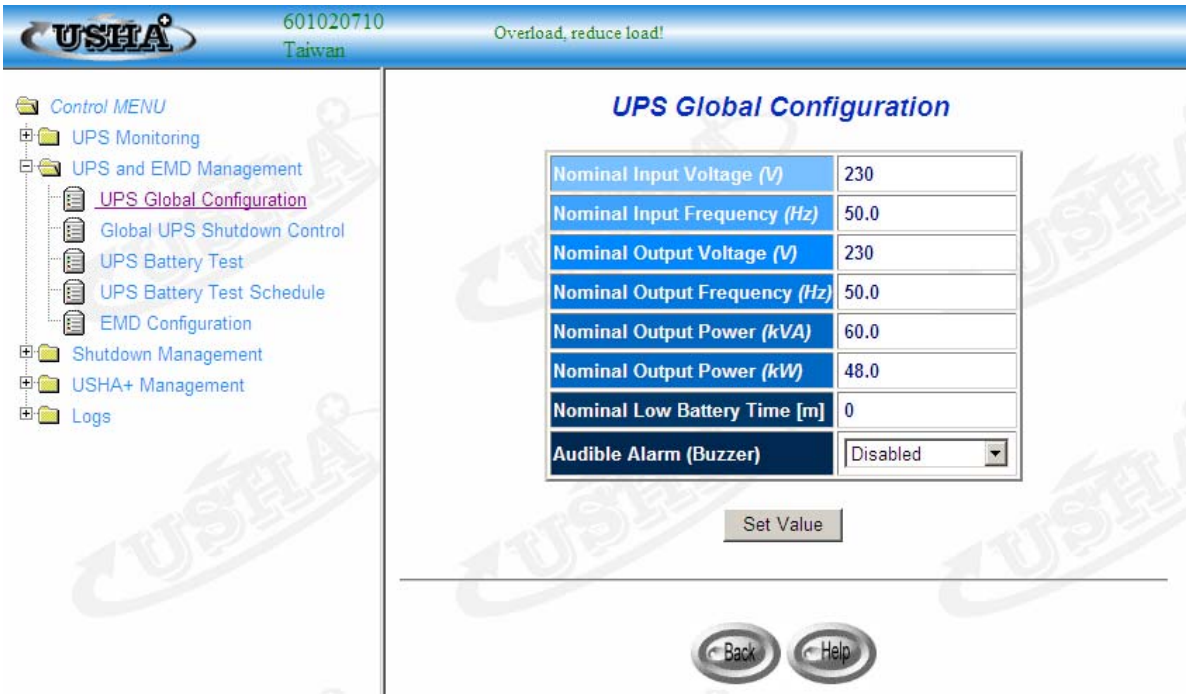


Figure 3-9 UPS Global Configuration

Global UPS Shutdown Control

On this page you may verify and modify the Shutdown configuration of the UPS. The various parameters controls the UPS behaviour after it has got a shutdown command:

UPS Shutdown Delay (Sec):	the delay time of the UPS, expressed in seconds, from receiving the shutdown command to the real execution of the shutdown. This parameter is identical to the parameter you can find in the Menu folder "Shutdown Management", on the "Shutdown Events Configuration" page.
UPS Auto reboot:	On or Off. Specifies if the UPS should reboot autonomously (with a programmable delay), when the Mains (AC input) restores.
Turn On UPS/Cancel UPS Shutdown:	Setting Turn On UPS/Cancel UPS Shutdown causes the UPS to cancel any on-going shutdown process. If the UPS has already shutdown, then it cancels the sleep command and brings back the output power.

To modify the **r**ead/**w**rite parameters, enter the administrator mode.

NOTE: - on a parallel UPS Systems, the parameters are sent to all ups modules. This is the meaning of the word "global"

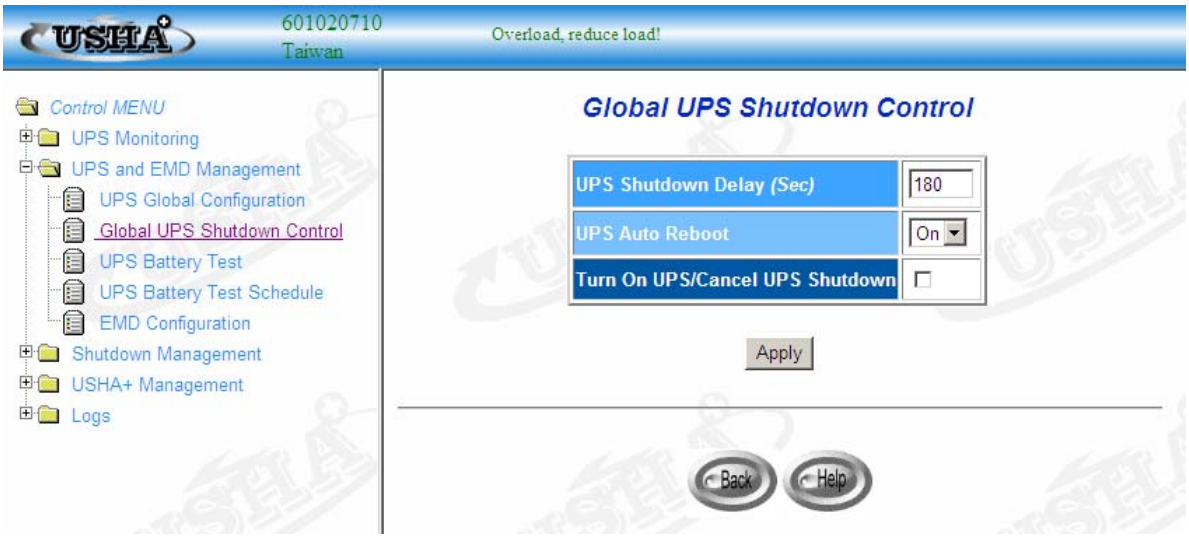


Figure 3-10 Global UPS Shutdown Control

UPS Battery Test

On this page you may check the result of the last battery test. Becoming administrator you may also execute a battery test, as follows:

Battery Test Command: Abort Test = stop the currently running test
Quick Battery Test = perform a time-limited test (the time is fixed by the UPS; ca. 3 minutes)
Deep Battery Test = run the UPS on battery until they are discharge. Use this test to verify the battery capacity. Obviously you have to execute this test when the UPS is not supplying critical loads.

NOTES: - on parallel units the test is performed an all modules sequentially, starting the next test only when the previously terminated. This is effective for all situations where each module has its own battery.

- Some conditions should be met in order for the test to be executed, Refer to the UPS manual for further details.

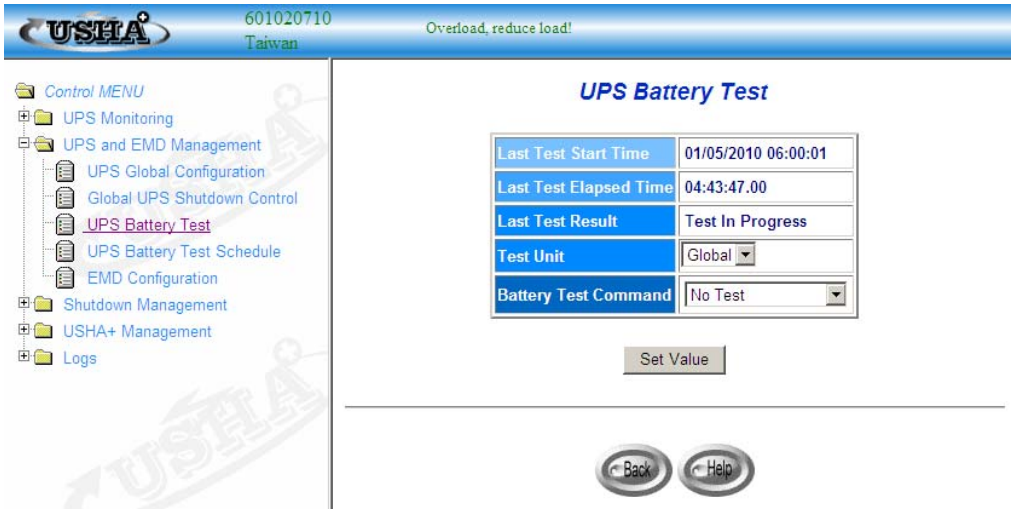


Figure 3-11 UPS Battery Test

UPS Battery Test Schedule

The same battery tests described previously can be scheduled for an automatic execution. For the meaning of the parameters, please refer to the precedent paragraph. The programming on this page is available if you get administration rights.

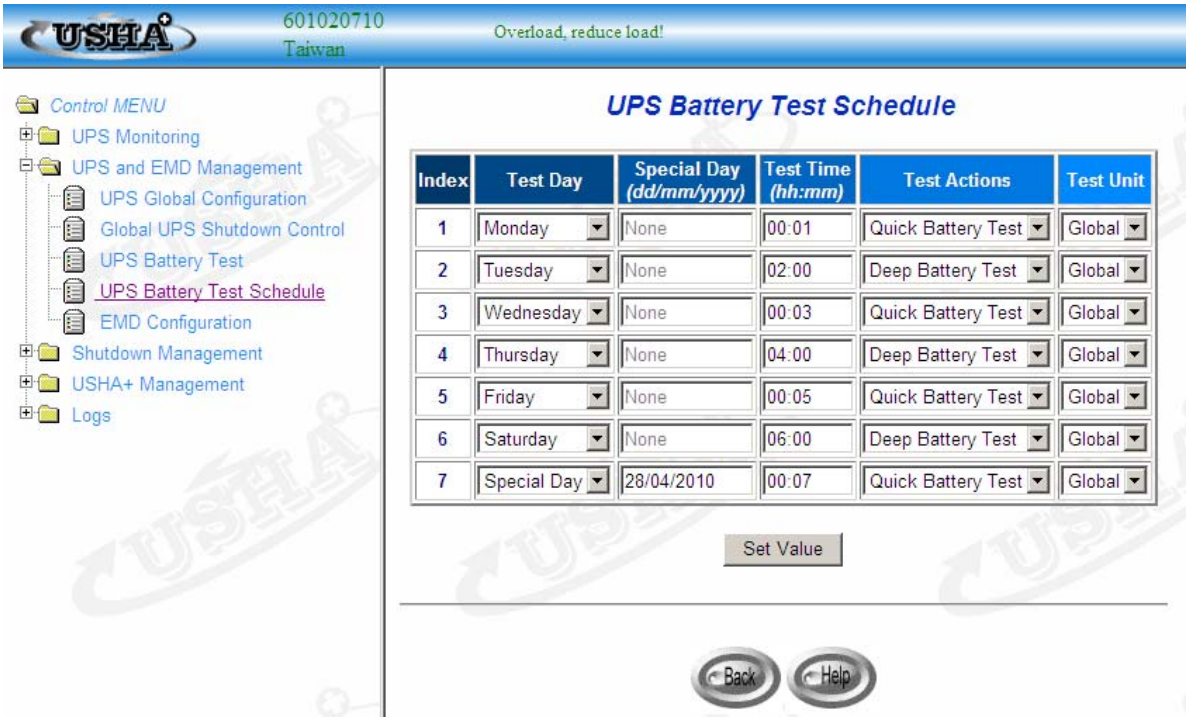


Figure 3-12 UPS Battery Test Schedule

EMD Configuration

This menu allows to configure all the necessary parameters of an optional EMD (External Management Device). Setting the EMD status to Auto, USHA+ can auto detect the EMD type. There are two types of EMD “EMD-HT” and “EMD-T”. The Temperature and Humidity will show in the Comprehensive View. User must setup the EMD than could see this configuration page. About setup EMD device, please see the EMD_ installation_ manual_ V1.10 for detail.

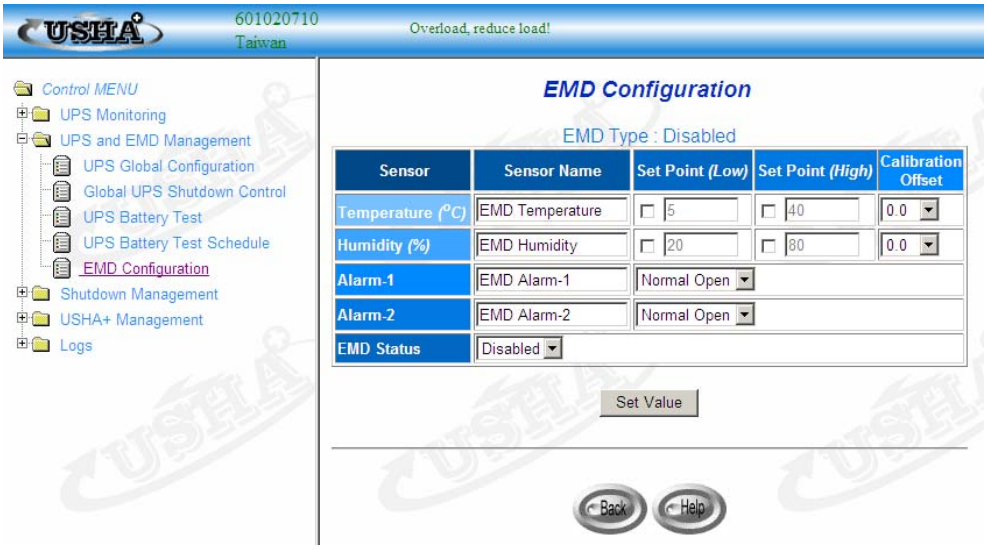


Figure 3-13 EMD Configuration

Shutdown Management

Shutdown Events Configuration

On this page you may define the parameters for controlling the shutdown of up to 250 clients and of the UPS. USHA+ knows 9 **events** which could trigger a shutdown process:

AC Failed	Mains Failure on the UPS input. If the checkbox "Discontinue UPS Shutdown if AC restores" is checked, then the UPS shutdown process will be stopped (but not the Client Shutdown, if it already has been triggered)
Battery Low	Alarm generated by the UPS, when the battery remaining autonomy reaches the low level specified by an internal UPS parameter. See Menu "UPS and EMD Management", Page "UPS Global Configuration", parameter "Nominal Low Battery Time". and refer to the UPS manual for further details. Special case: when the checkbox "**Battery Low Time**" is specified, then this value is used for triggering the shutdown, rather than wait for the "battery Low alarm" coming from the UPS.
UPS Overload	The UPS signals an overload condition
UPS Over Temperature	The UPS signal an overtemperature
Weekly Schedule	Shutdown process controlled by the weekly scheduling (refer to the next web page), for recurrent shutdown/ restore commands.
Special Day	Enable the execution of Shutdown and restore commands for specific, non recurrent days (refer to the after next web page)
EMD Temperature over Threshold	The EMD temperature sensor detects a temperature which is outside the programmed thresholds (lower or upper)
EMD Alarm-1	Alarm-1 sensor on EMD detects an active alarm.
EMD Alarm-2	Alarm-2 sensor on EMD detects an active alarm.

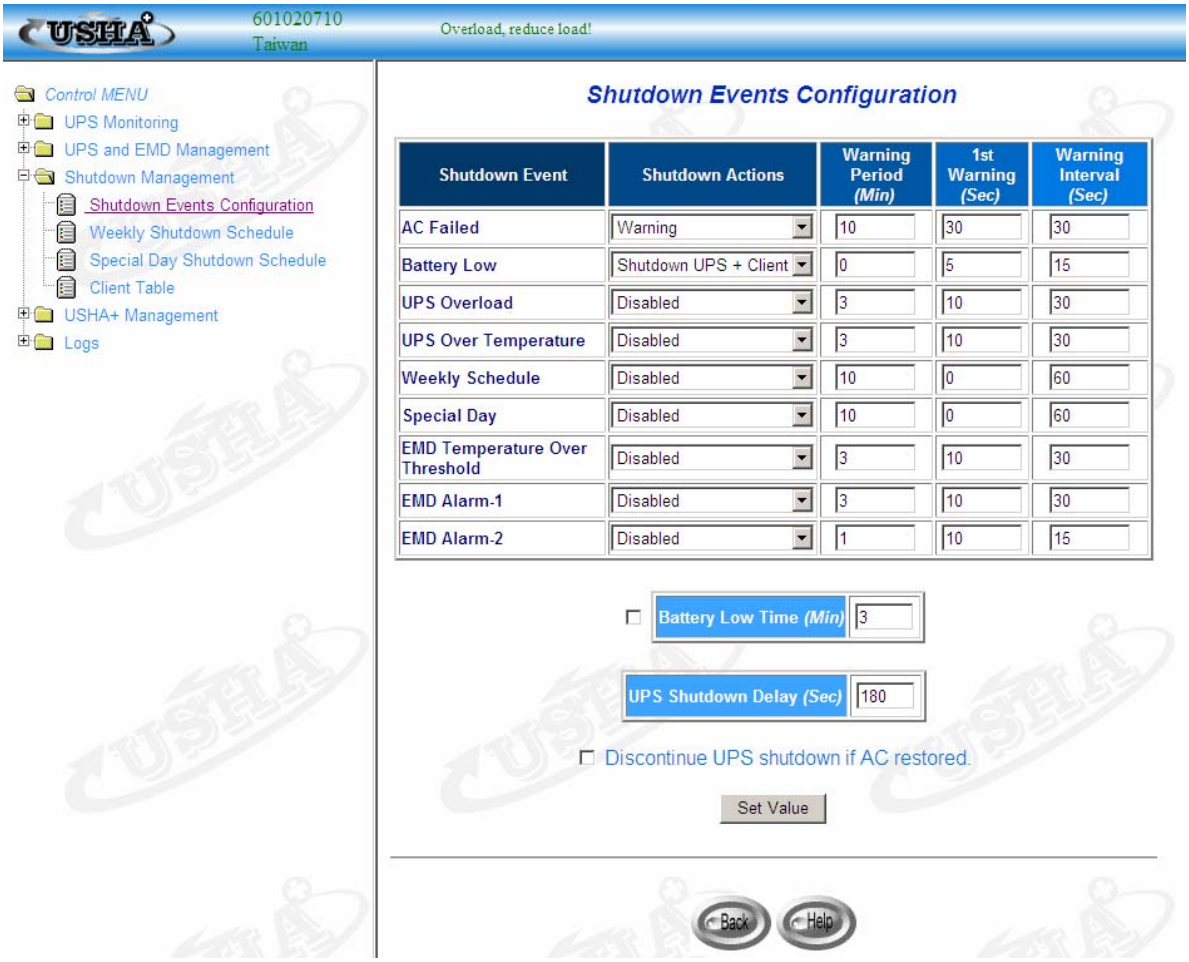


Figure 3-14 Shutdown Events Configuration

The customer can define which action should be executed when one of the listed events occurs. Possible actions are:

Disabled	Action is disabled. No shutdown is performed.
Warning	Warning messages will be broadcasted to all connected clients. No shutdown is performed.
Client Shutdown	After a warning period where warning messages are broadcasted to all clients, the shutdown command will be issued to all connected clients. They will then start the shutdown process. Note that on each client the operator can abort the shutdown process during the warning period.
Shutdown UPS + Client	Additionally to shutting done all the connected clients as above, a shutdown command is also sent to the UPS, after the delay specified by "UPS Shutdown delay". This parameter is configurable when having administrator rights.

The delay times in the tree successive columns have following means:

Warning period	The time, expressed in minutes, during which all connected client are constantly and periodically alerted about the critical event. During this time the operator on each client can abort the shutdown process on their respective machine.
1st Warning	The first warning can be delayed by the specified time, expressed in seconds
Warning Intervals	The time delay between two consecutive warning, expressed in seconds.

Weekly Schedule

This menu lets you modify the parameters of the shutdown/restore events associated with the days of the week (Figure 3-15).

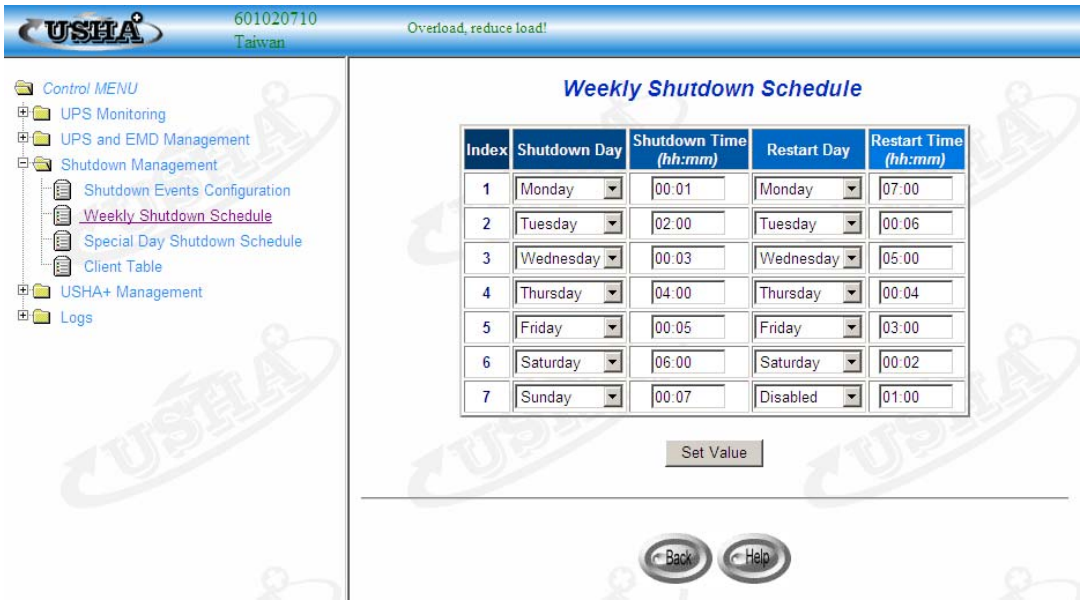

601020710
Taiwan
Overload, reduce load!
Control MENU
UPS Monitoring
UPS and EMD Management
Shutdown Management
Shutdown Events Configuration
Weekly Shutdown Schedule
Special Day Shutdown Schedule
Client Table
USHA+ Management
Logs
Weekly Shutdown Schedule
Index | Shutdown Day | Shutdown Time (hh:mm) | Restart Day | Restart Time (hh:mm)
1 | Monday | 00:01 | Monday | 07:00
2 | Tuesday | 02:00 | Tuesday | 00:06
3 | Wednesday | 00:03 | Wednesday | 05:00
4 | Thursday | 04:00 | Thursday | 00:04
5 | Friday | 00:05 | Friday | 03:00
6 | Saturday | 06:00 | Saturday | 00:02
7 | Sunday | 00:07 | Disabled | 01:00
Set Value
Back
Help

Figure 3-15 Weekly Shutdown Schedule

Special Day Shutdown Schedule

This menu lets you modify the parameters of the shutdown/restore events associated with certain days of the year (Figure 3-16).

601020710
Taiwan
Overload, reduce load!
Control MENU
UPS Monitoring
UPS and EMD Management
Shutdown Management
Shutdown Events Configuration
Weekly Shutdown Schedule
Special Day Shutdown Schedule
Client Table
USHA+ Management
Logs
Special Day Shutdown Schedule
Index | Shutdown Date (dd/mm/yyyy) | Shutdown Time (hh:mm) | Restart Date (dd/mm/yyyy) | Restart Time (hh:mm)
1 | 01/01/2001 | 01:00 | 01/01/2001 | 00:08
2 | 01/01/2002 | 00:02 | 01/01/2002 | 07:00
3 | 01/01/2003 | 03:00 | 01/01/2003 | 00:06
4 | 01/01/2004 | 00:04 | 01/01/2004 | 00:05
5 | 01/01/2005 | 05:00 | 01/01/2005 | 04:00
6 | 01/01/2006 | 06:00 | 01/01/2006 | 00:03
7 | 01/01/2007 | 00:07 | 01/01/2007 | 02:00
8 | 01/01/2008 | 08:00 | 01/01/2008 | 00:01
Set Value
Back
Help

Figure 3-16 Special Day Shutdown Schedule

Client Table

On this page you have an overview on all connected clients running the shutdown application. You see the total number, the identification for each client (ip address, Client name) and the shutdown delay configured on each client. This value is updated (synchronized) as soon it is changed on the client. The indication "Connected Time" shows when the last synchronization took place.

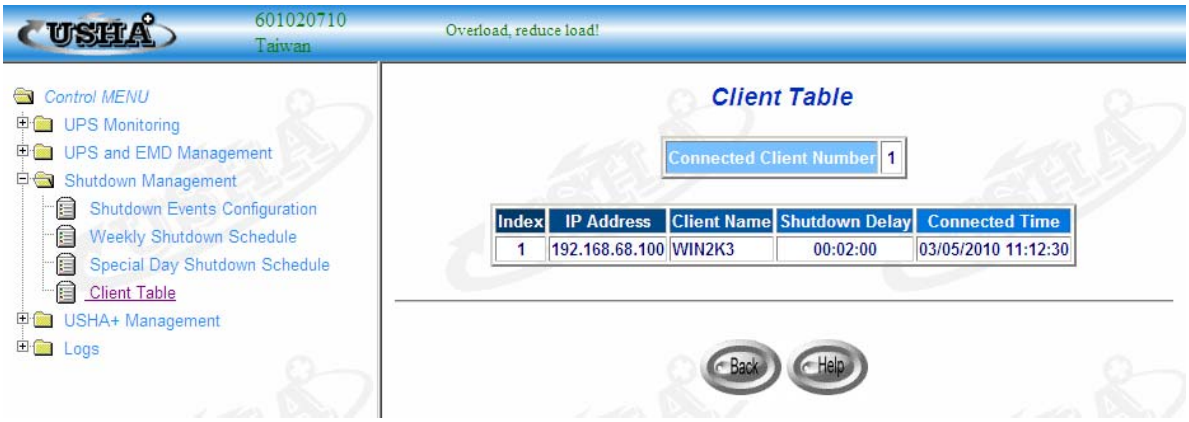


Figure 3-17 Client Table

USHA+ Management

Through this menu, you can display and modify the USHA+ control parameters.
All the menus are available in read-only for all users, whereas only the administrator has access in read/write mode.

USHA+ System Info

Basic information about your USHA+ device

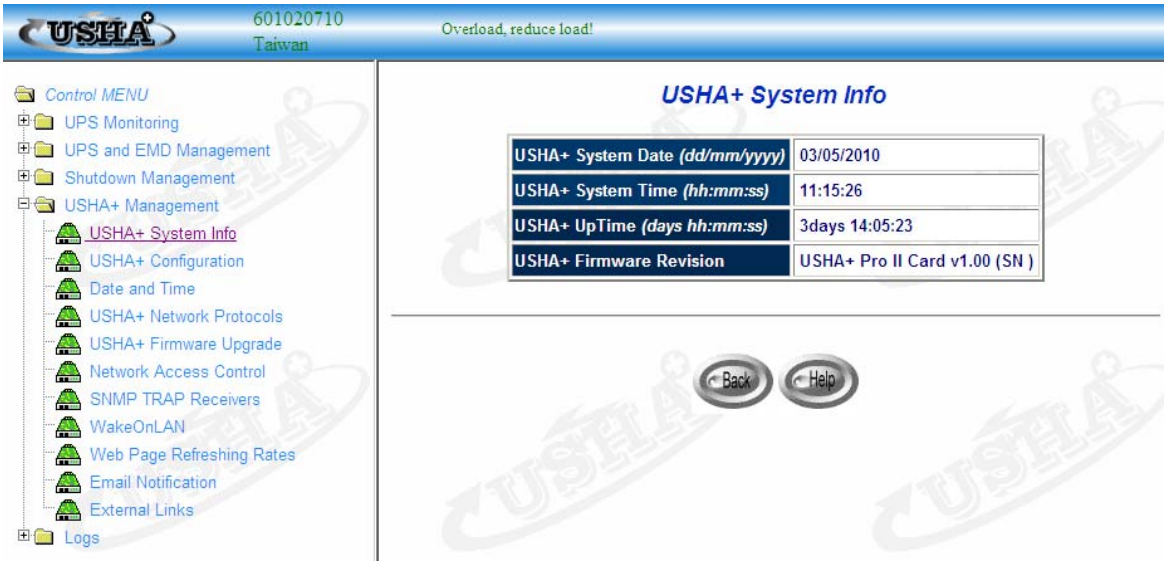


Figure 3-18 USHA+ System Info

USHA+ Configuration

This menu lets the administrator set the local network configuration parameters in USHA+. The basic variables for SNMP management can also be set.

USHA+ IP Address	The IP address of the USHA+ in dotted format (e.g. 192.168.1.100). Note that changing the IP Address of the USHA+, reboot was unnecessary.
USHA+ Gateway Address	The IP address of the network gateway in dotted format (e.g. 192.168.1.254).
USHA+ Subnet Mask	The Subnet Mask for your network (e.g. 255.255.255.0).
System Name	SNMP Network Administrator string.
System Contact	SNMP Network Administrator string.
System Location	SNMP Network Administrator string.
UPS Data Log Interval(Sec)	This value is the time in seconds to poll Input Voltage, Output Voltage, Load, Capacity, Battery temperature and Input frequency.

	These values are saved in the History Log. The maximum value for this setting is 28800 seconds (i.e. 8 hours).
Extended Log Interval(Min)	This field shows the set interval, in minutes, to create an extended data (measurements) log. After every interval, the major UPS measurement values will be consolidated and minimum, maximum and average values of these measurement stored to the extended data log. This value can range between 3 and 9000 minutes.
Temperature Unit	Select the Temperature Unit to Celsius or Fahrenheit.

Date and Time

This menu lets you set the USHA+ internal date and time. There are three ways to set the Date and Time (Figure 3-16). Synchronize with computer time, Synchronize with NTP server or set the date and time by manually.

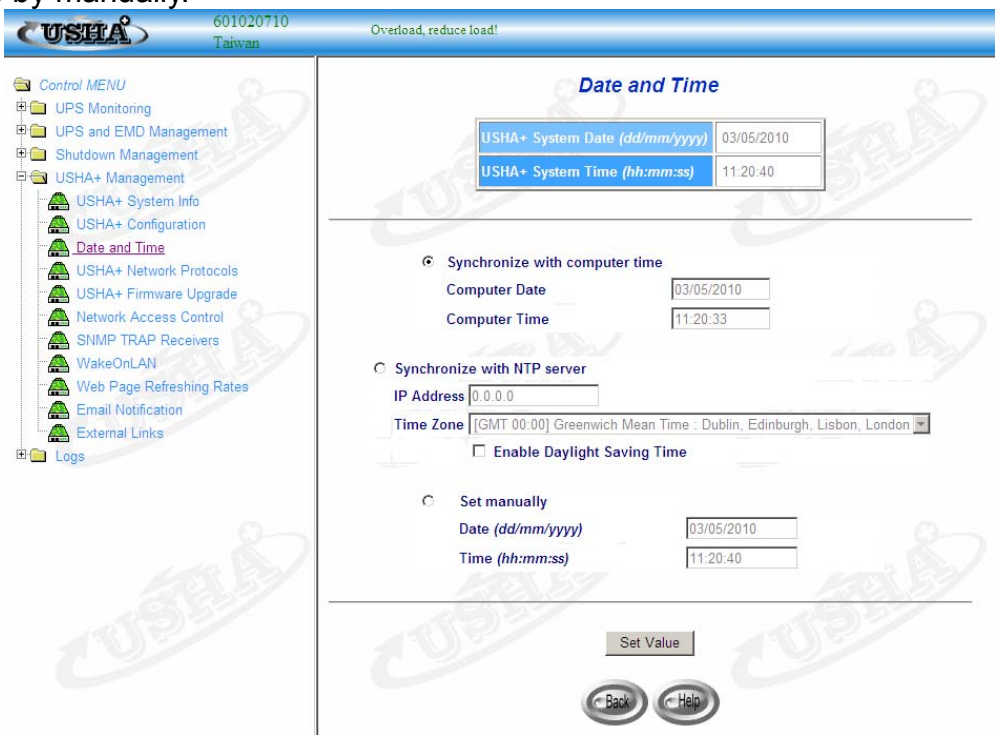


Figure 3-19 Date and Time

USHA+ Network Protocols

This menu lets you enable or disable the communication protocols available in the USHA+ and affect a restart and reset of the USHA+ internal parameters. Some of the items in this menu are visible only to those having read/write access rights.

1. **BOOTP/DCHP:** Enabling or disabling the Boot Protocol (BOOTP) / Dynamic Host Configuration Protocol (DHCP). These protocols are Internet standards used to get a dynamic IP address from a BOOTP / DHCP server.
2. **Ping Echo:** Enabling or disabling the USHA+ to respond to Ping requests.
3. **Network Upgrade:** Enabling or disabling the Trivial File Transfer Protocol (TFTP) upgrade control. You can use **upgrade.exe** on Windows via TFTP to upgrade USHA+ firmware.
4. **Telnet Connection:** Enabling or disabling the terminal to server application (Telnet) control process. The standard port is 23.
5. **SSH Connection:** This is the parameter enabling or disabling the terminal to the server application (SSH) control process. (E.g. SSH 192.168.7.18). The user may configure the SSH protocol to use a port number other than the standard SSH port is 22.

6. **HTTP Support:** Enabling or disabling the HTTP connection with the USHA+. The user may configure HTTP protocol to use a port number other than standard HTTP port (80).
7. **SNMP Support:** Enabling or disabling the SNMP connection with USHA+. The user may configure the SNMP protocol to use a port number other than the standard SNMP port (161).
8. **SNMP Version:** This field allow the administrator to set the Simple Network Management Protocol version. When enable, administrator has the options to set for SNMPv1, SNMPv2 or SNMPv3.
9. **UPnP Support:** Enable/Disable the Universal Plug and Play (UPnP) feature with the USHA+.
10. **SMTP:** The user may configure the SMTP protocol to use a port number other than the standard SNMP port (25).
11. **Reset to Default:** Instructs USHA+ to reset parameters to factory default value.
12. **Restart USHA+:** Instructs USHA+ to restart.

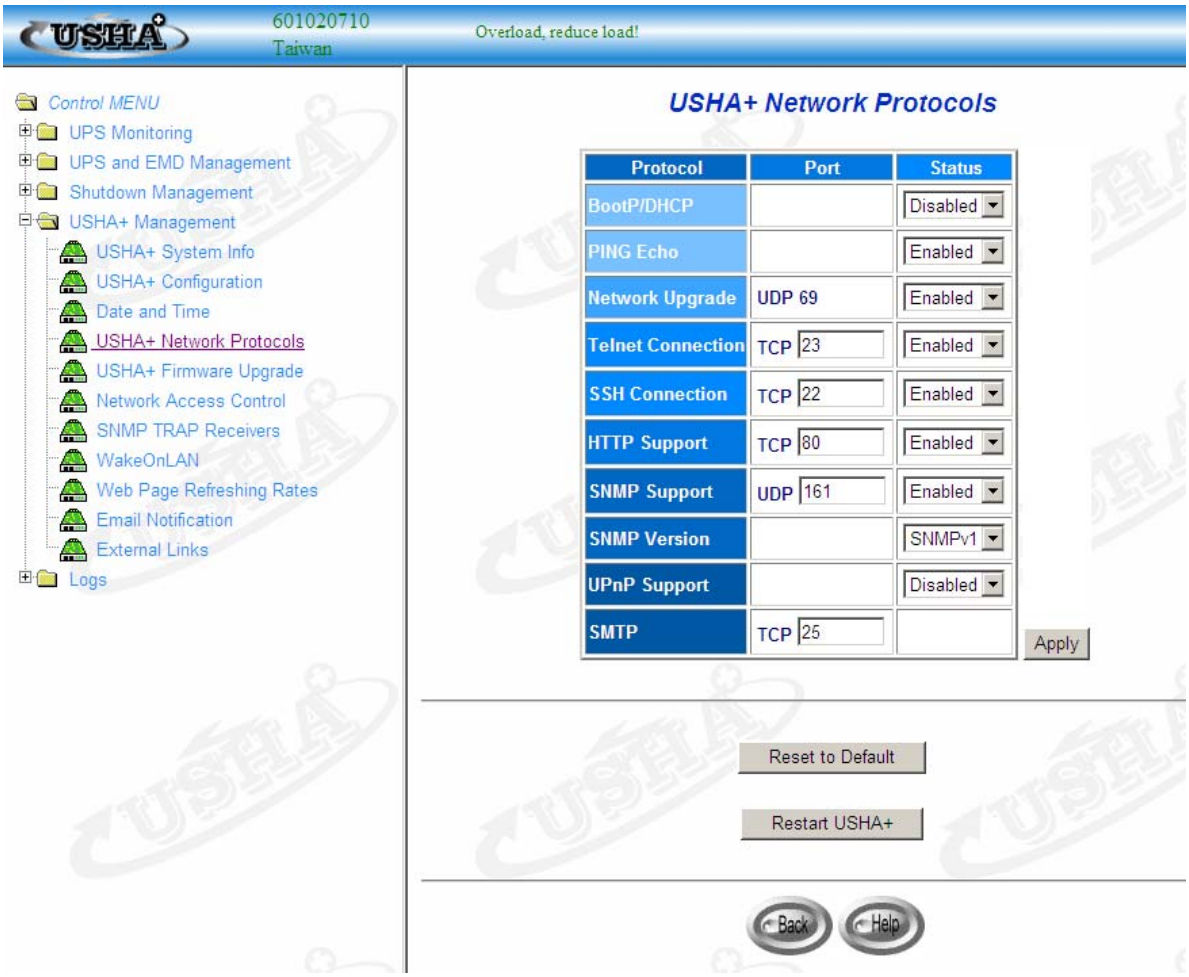


Figure 3-20 USHA+ Control

USHA+ Firmware Upgrade

This page allows for upgrading the firmware of USHA+. Alternatively you could also upgrade using the Upgrade Utility on the CD.

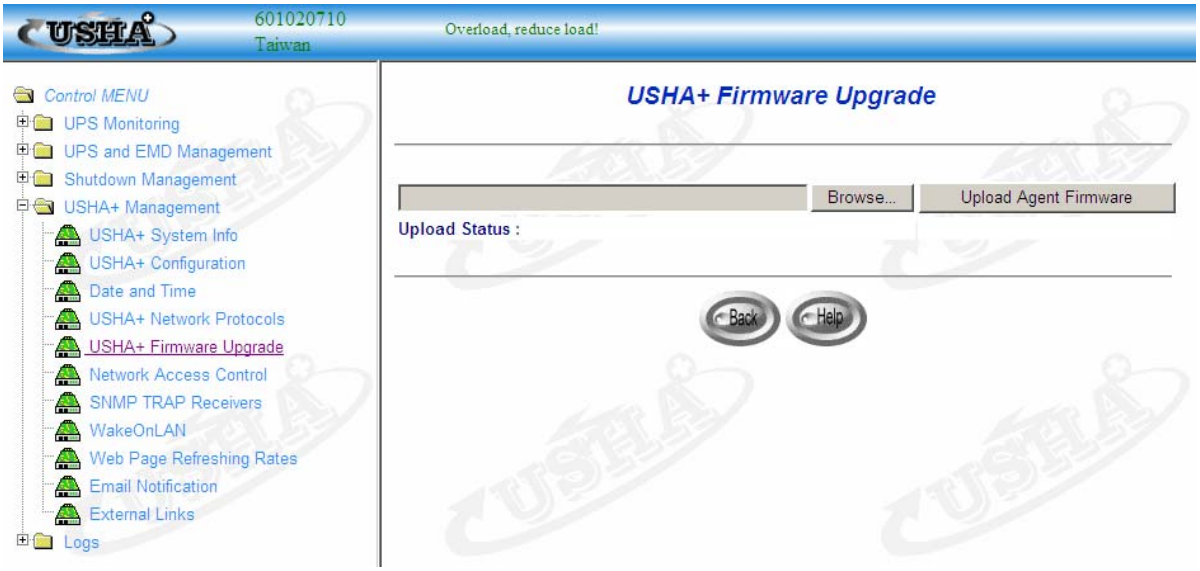


Figure 3-21 USHA+ Firmware Upgrade

Network Access Control

This menu displays a list of the workstation enabled to access USHA+ for read/write operations. See **Appendix C** HTTP Security Control for detail

1. **Index:** The index number of the entry in the table.
2. **NMS IP Address:** The management station's IP address. 0.0.0.0 means entry not configured. 255.255.255.255 grant the access right to all IP. It also can configure all IP address in same subnet with same access right. Like 192.168.1.255
3. **Community:** Low-level password associated with the IP Address. The maximum length of the string is 16 characters.
4. **Access Type:** Access right associated with the IP Address. Available options are: NotAccess, Read, and Read/Write. If the IP Address was set to NotAccess or Read, it can't grant to administrator right even use Admin password.

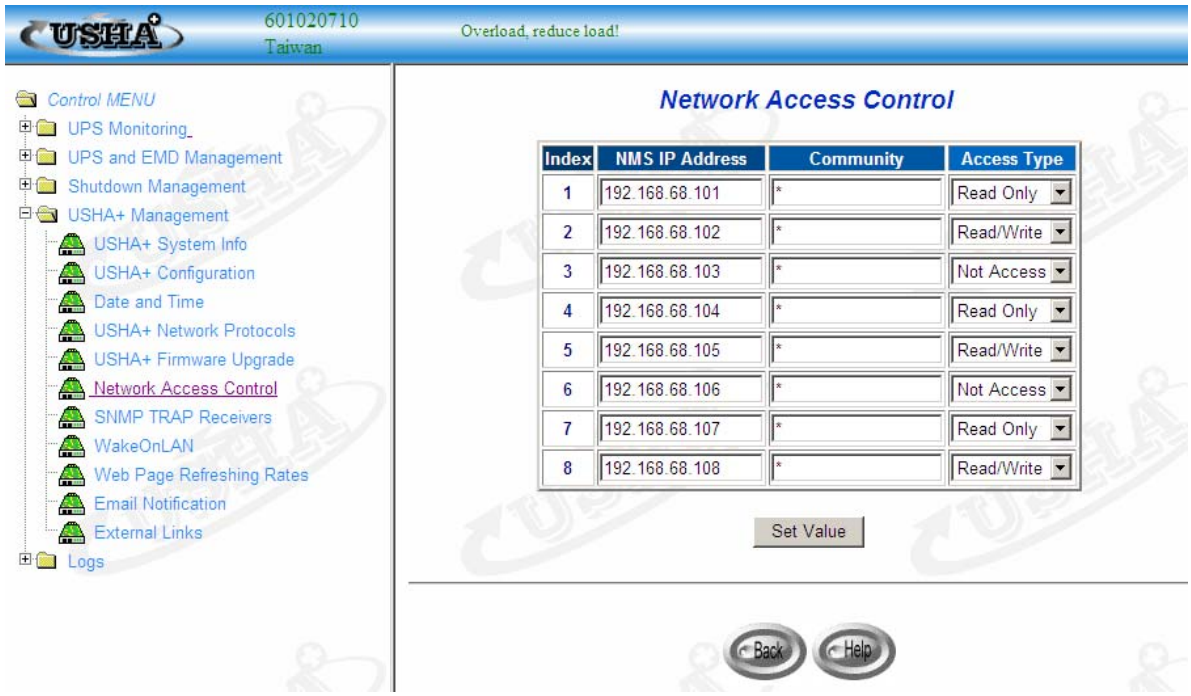


Figure 3-22 Network Access Control

SNMP Trap Receivers

This table can hold a maximum of eight entries. It holds the list of the IP address of the Network Management Stations (NMS), which will receive the SNMP traps

1. **Index:** The index number of the entry in the table.
2. **NMS IP Address:** The IP Address in dotted format of the NMS station to which the trap should be sent.
3. **Community String:** Low-level password associated with the IP Address. The maximum length of the string is 16 characters.
4. **Trap Type:** Types of traps to be received.
   - **None:** Traps are not sent
   - **RFC-1628 Trap:** Traps are sent base on RFC-1628
   - **USHA+ Trap:** Traps are sent base on USHA+ MIB
5. **Severity:** Set the level of the trap to be sent.
   - **Information:** All traps are sent
     - **Warning:** Send traps that need to be noticed and are critical
     - **Severe:** The most significant and critical traps such as UPS failure and low-battery which leads to a power failure (output of the UPS) are sent
6. **Description:** Customer description string.

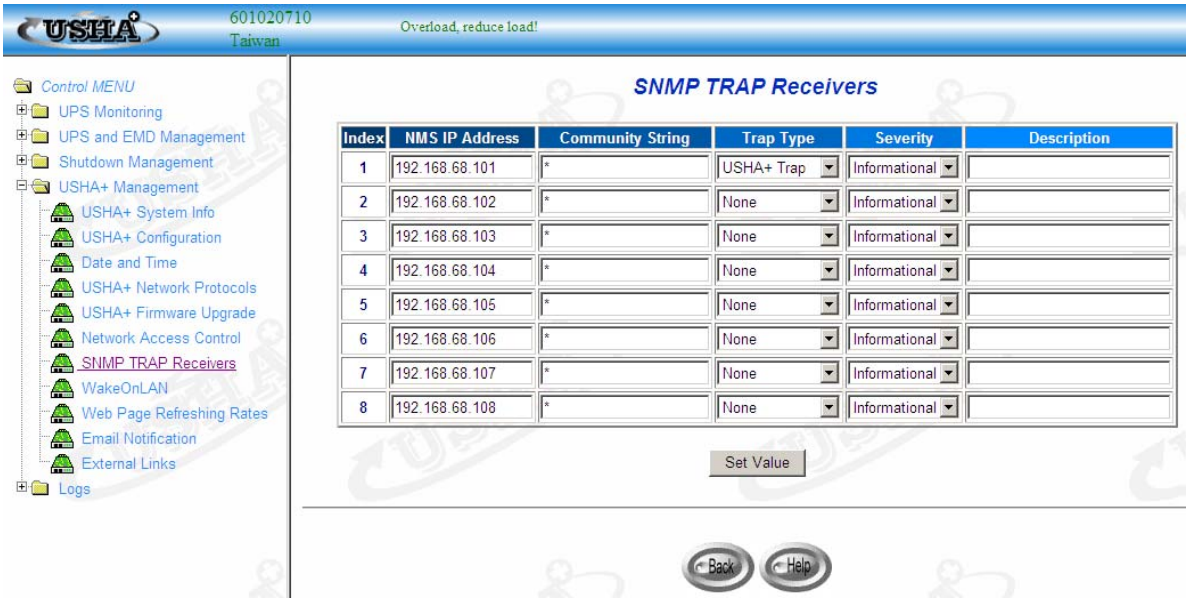


Figure 3-23 SNMP TRAP Receivers

WakeOnLAN

WOL" function could boot any client PC configured for WOL over the network, knowing the MAC address of the client. From this page, we can set 32 client's MAC Addresses. When any client has been shutdown by an USHA+ event, it could be restarted by USHA+ as soon as the event (alarm on the UPS) reverts to normal. This is achieved sending the special WOL packet .

Figure 3-24 WakeOnLAN

Web Page Refreshing Rate

This menu lets the administrator set the refresh interval of the USHA+ menu pages.

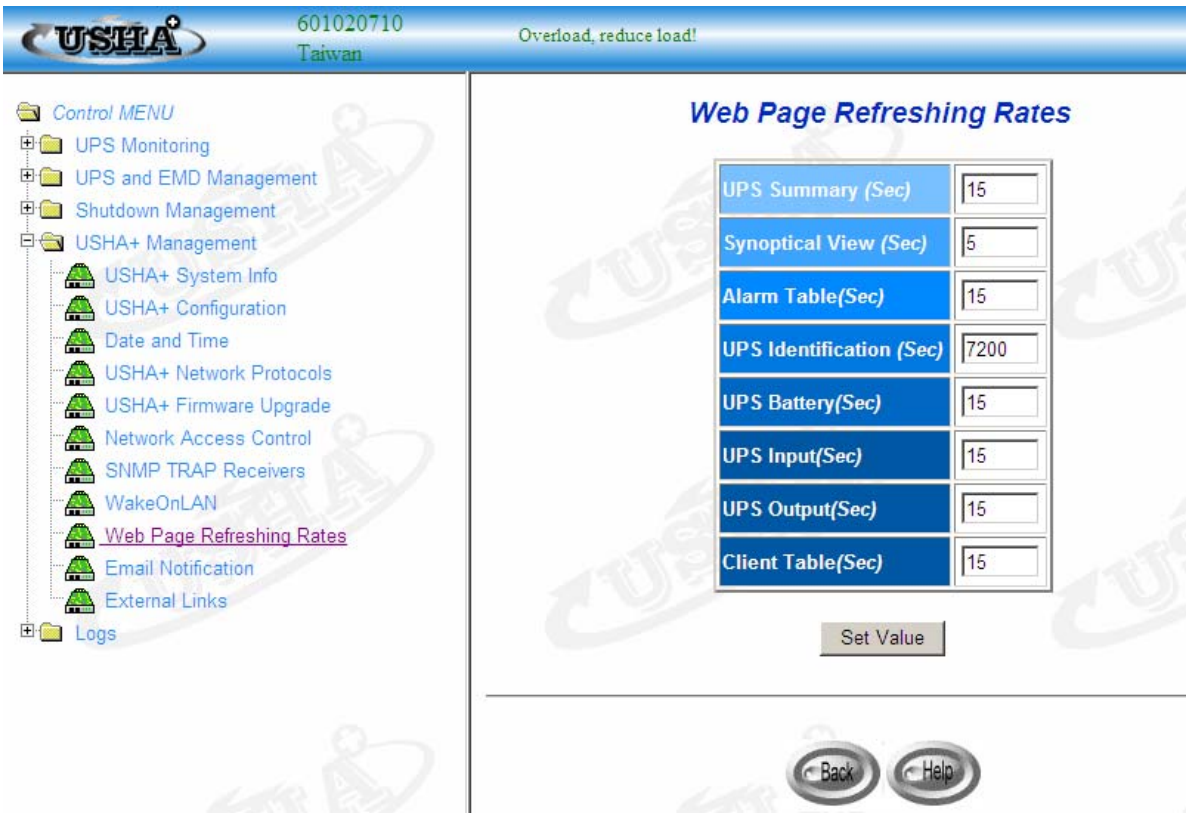


Figure 3-25 Web Page Refreshing rate

Email Notification

On this page you can configure the mail sending functionality, and define the access to the mail server. USHA+ uses the mail service in order to notify one or more receivers on occurrence of various evens or on regular basis.

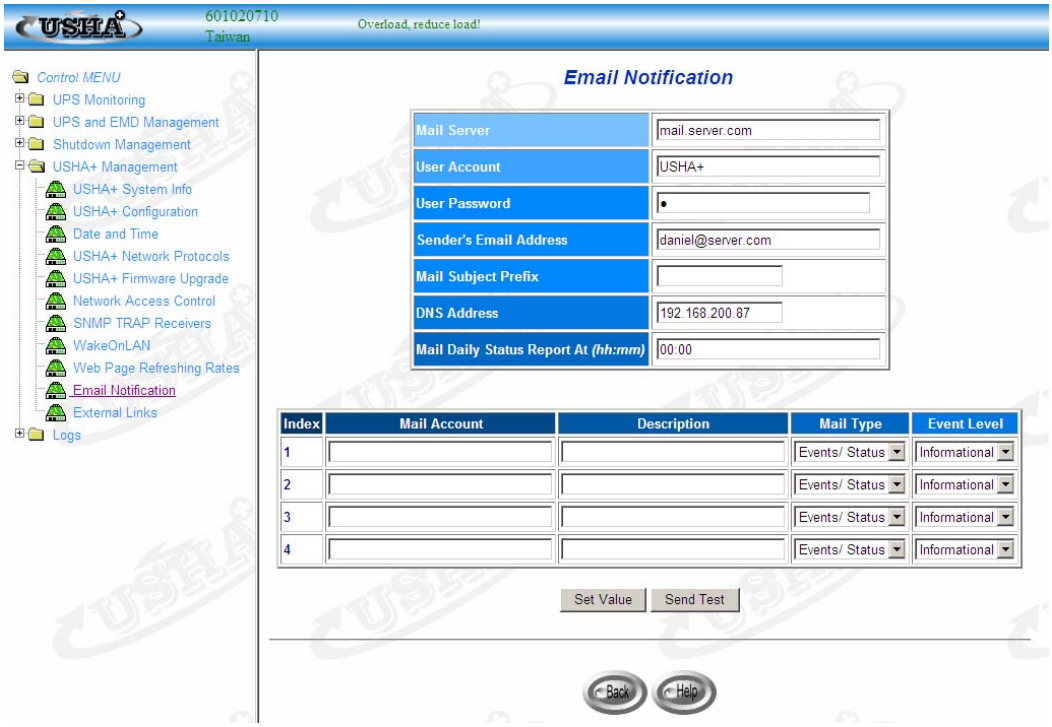


Figure 3-26 E-mail Notifications

1. **Mail Server**
   This item is the Hostname of a SMTP Mail Server that will be used to send email messages from the USHA+. If entering a Hostname, you are also required to enter the DNS Address.
2. **User Account**
   This item is the User Account of Mail Server. Default has no entry, and only required if Mail Server needed for authentication to send mail.
3. **User Password**
   This item is for entering the User Password of User Account.
4. **Sender's Email Address:** This field specify the content of the 'From' field of the Email. If this field left blank, the sender's address will be account@ip_address.
5. **Mail Subject Prefix:** The string prefix in the mail subject to identify the device which sends out the mail.
6. **DNS Address**
   This item is the IP Address of your network DNS server that's responsible for translating names into addresses, routing mail to its proper destination. Default, this field will contain 0.0.0.0.
7. **Mailing Daily Status Report At (hh:mm)**
   If you intend to have the USHA+ send a Daily Status report to select Mail Receiver, you need to enter the time of day in 24-hour format at which time you want the email to be sent.
8. **Mail Account**
   This column is for entering the email address of the individual that are entitled to receive report- or alarm-emails. Up to 4 destinations can be defined.
9. **Description**
   This column is just for entering a description
10. **Mail Type**
    This column is for selecting what type of email is sent to the specific Mail Receiver. The choices are *None, Events, Daily Status, or Event/Status*.
    - **None:** allow you to disable the sending of email to a specific recipient.
    - **Events:** specifies that the recipient should receive event-related messages while event occur.
    - **Daily Status:** specifies that the recipient should receive the Daily Status message while "Mailing Daily Status Report At (hh:mm)" setting time is up. The message contains three file attachments containing information logged by the USHA+ (in .csv format suitable for

viewing in Microsoft Excel). One attachment contains the Data Log (UPS measurements), the second one contains the UPS Alarms and the last contains the USHA+ Log (Logged USHA+ related events).

- **Events/Status:** specifies that the recipient should receive an email message containing the event-related notification and the three file attachments (as described above), each time an event notification is sent.

11. **Event Level**

    This column is for selecting the Severity level of notification you wish to send to each Mail Receiver configured to be sent Mail Type: Events or Events/Status. This filter is based on the SNMP-based traps (Events) and allows selection of Informational, Warning or Severe. Refer to the MIB documentation for more information and to know the severity levels.

External Links

This page describes the setting of External Links. Up to four links can be setup by this page, each link can configure to an external web page that user can easily to connect to related web pages. Such as another UPS with USHA+ card, or technical support homepage. (Figure 3-27)

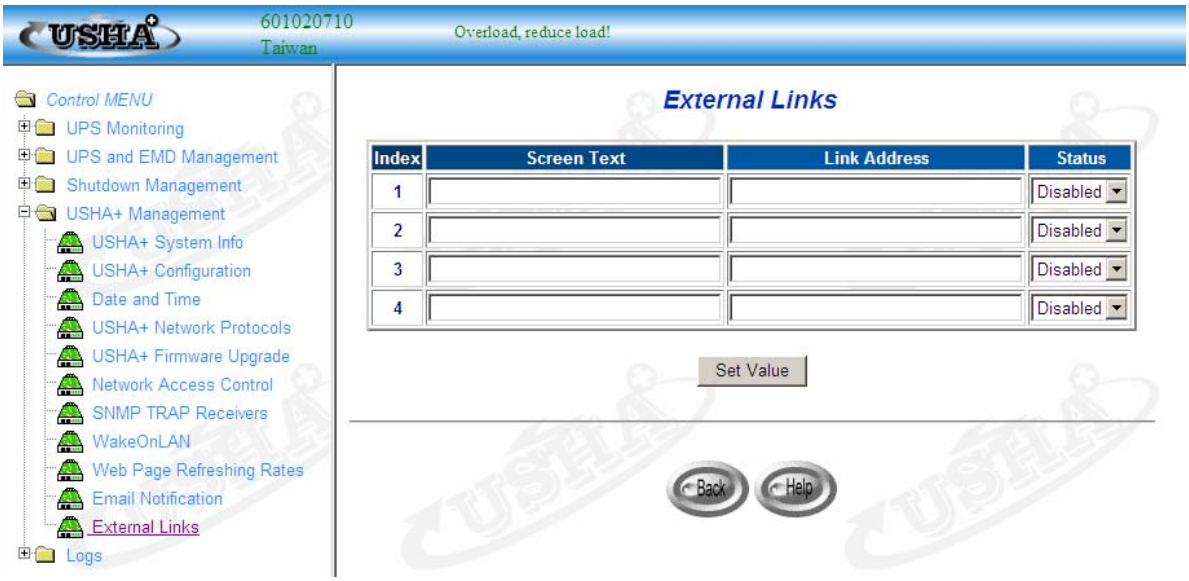


Figure 3-27 External Links

Screen Text

This is the description of hyperlink name, which will display on the menu tree for user's reference.

Link Address

This field defines the web page location to be connected, in IP address or URL format.

Status

This field controls the visibility of this hyperlink on menu tree. Setting "Disable" will make this hyperlink invisible from menu tree.

Logs

Through this menu you can view all types of UPS & USHA+ log messages displayed in chronological order such as the *UPS History Log*, *UPS Extended Log*, *UPS Events Log* and *Agent Events Log*. These log messages can help you detect and diagnose problems with your USHA+.

Global UPS Extended Log

This page gives a consolidated view of the UPS parameters taken over a time interval. For each of the UPS parameters, minimum, maximum and the average values are shown in each of the records. The Administrator can change the consolidation interval by changing the value of the *Extended Log Interval* in *USHA+ Configuratio*n page. The existing log is overwritten when the maximum numbers of entries are reached.

1. **Start Date:** Date on which the recording was made
2. **Start Time:** The time in a 24-hour format when the values were recorded
3. **End Date:** The ending date of the consolidation interval for the record
4. **End Time:** The ending time of the consolidation interval for the record
5. **Input Voltage:** The minimum, maximum and average values of the input voltage during the consolidation interval
6. **Output Voltage:** The minimum, maximum and average values of the output voltage during the consolidation interval
7. **Output Load:** The minimum, maximum and average values of the output load during the consolidation interval
8. **Battery Estimated Charge:** The minimum, maximum and average values of the battery capacity during the consolidation interval
9. **Battery Estimated Minutes:** The minimum, maximum and average values of the battery autonomy time during the consolidation interval
10. **EMD Temperature:** The minimum, maximum and average values of the EMD temperature during the consolidation interval
11. **EMD Humidity:** The minimum, maximum and average values of the EMD humidity during the consolidation interval

UPS Data Log

This page gives you the measurement registered periodically on a fixed time interval. The time interval can be configured on the Menu "USGA Management, page "USHA+ configuration", parameter "History Log Interval"

To save the Data log to a file in Microsoft Excel format, go to the *Clear & Save Log Data* sub-menu and click on the link *UPS History Log* under the *Save Log Data* title bar.

1. **Log Date:** Date on which the recording was made
2. **Log Time:** The time in a 24-hour format when the values were recorded
3. **Input Voltage:** The input voltage in Volts at the time of recording
4. **Output Voltage:** The output voltage in Volts at the time of recording
5. **Output Load:** This shows the load on the UPS in terms of percentage at the time of recording
6. **Battery Capacity:** The current battery capacity expressed in percent of full capacity
7. **Battery Runtime:** the instant battery autonomy, at the recording time
8. **Input Frequency:** The input frequency in Hertz at the time of recording
9. **UPS Temperature:** The temperature of the UPS battery in Celsius at the time of recording
10. **EMD Temperature:** The current EMD temperature.
11. **EMD Humidity:** The current EMD humidity.

UPS Alarm and States

The time ordered list of all alarms or status changes occurred on the UPS. For Parallel units you will see on the event descriptor which unit issued the alarm (e.g. UPS-3). The indication "Global" means that the alarm (or particular status) promoted at System level. Therefore it has been registered on more units than just the redundant ones and should be considered critical if it is an alarm.

UPS Events

This table lists all the events that have occurred since the table was cleared. The existing values are overwritten when the maximum number of entries (rows) has been reached.

1. **Date:** The date when the UPS event occurred
2. **Time:** The time when the UPS event occurred
3. **Event Description:** The description of the UPS event occurred

USHA+ Events Log

This menu lists all the USHA+ events that have occurred since the table wad cleared. The Administrator has the access right to delete the entries of the table.

1. **Date:** The date when the agent event occurred
2. **Time:** The time when the agent event occurred
3. **Event Description:** The description of the agent event occurred

Clear & Save Log Data

This page lets the Administrator saves USHA+ log data to a file in Microsoft Excel format. Administrator is also able to clear specific log data or choose to clear the log data after saving the log data.

1. **Clear Log Data**: Administrator can clear the specific log data by putting a check mark beside it and click the Clear button.
2. **Clear the corresponding log data as you click the hyper-link below:** Administrator can choose to clear the log data after saving the log to a file. Select Yes or No and click the Apply button. Default value is set to "No"
3. **Save Log Data:** Administrator can save the various USHA+ log data to a file with the extension .csv that can be opened and read in MS Excel.

Attention: when the radio button "Clear the corresponding log data as you click the hyper-link below" selection is set to “Yes”, as soon you click on any one of the hyper-link below, the data is **definitively lost**, even if you cancel the operation.

Extra Browsing Options-PDA & WAP

USHA+ now provide more easy of using remote browsing ways. User can get the UPS status through PDA or WAP mobile phone, which own ability to connect to Internet already. According to every manufacturer setting was different, please reference to PDA and WAP User Manual for connect to Internet. If your PDA or WAP can browse Internet, You can start browsing the UPS status by input the USHA+ address.

PDA

Please input on PDA: "USHA+ address/PDA" or "USHA+ address/P"
Ex: HTTP://192.168.11.100/PDA or HTTP://192.168.11.100/P you can see the UPS status page. (Figure 3-25)

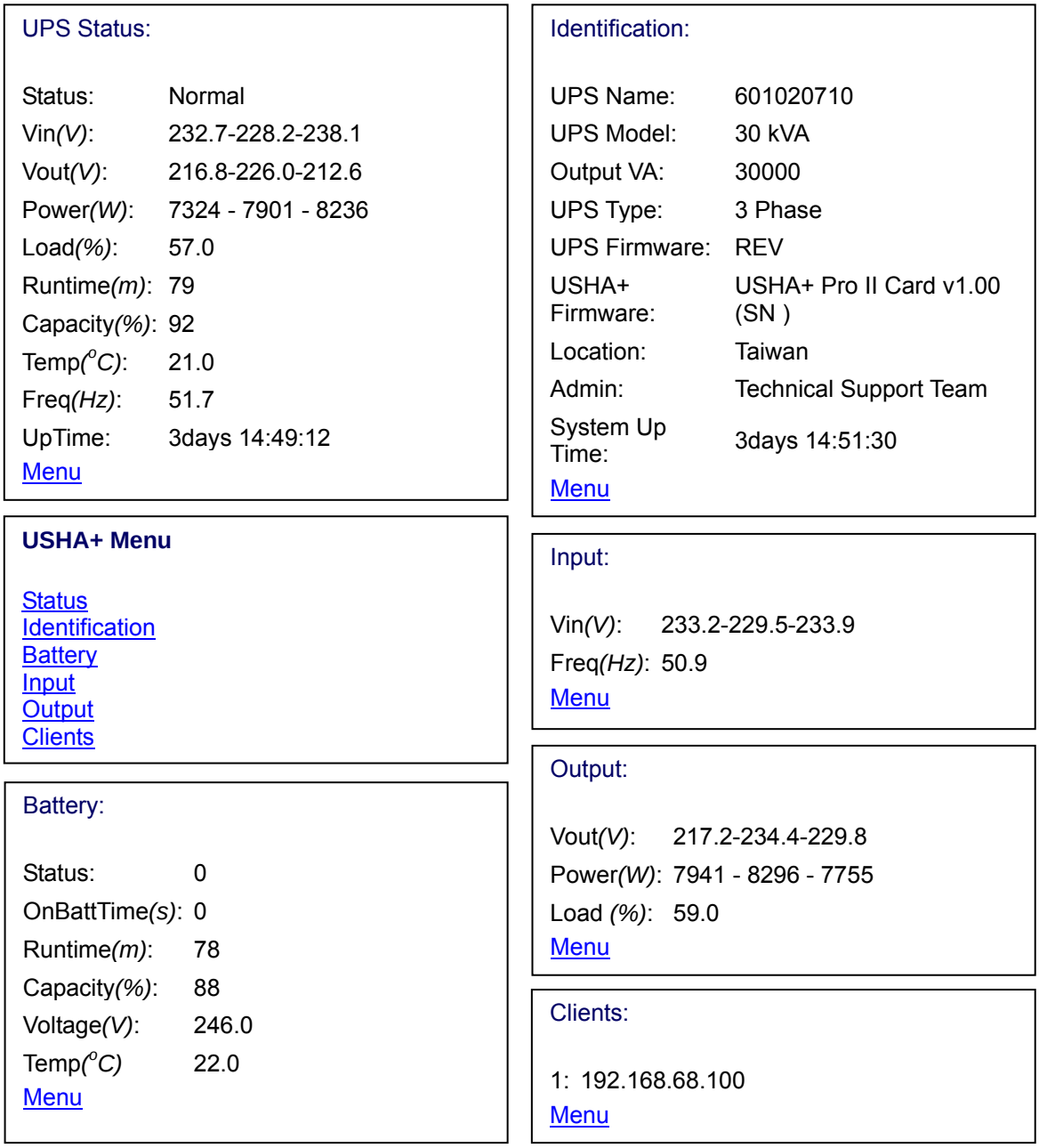


Figure 3-25 Extra Browsing Options -PDA

WAP

Please input on WAP phone: “USHA+ address/WAP” or “USHA+ address/P”
Ex: HTTP://192.168.11.100/WAP or HTTP://192.168.11.100/W you can see the UPS status page. (Figure 3-26)

Figure 3-26 Extra Browsing Options -WAP

Chapter 4 Managing USHA+ via SNMP

Setting SNMP parameters in USHA+

If you intend to manage your USHA+ via SNMP NMS (Network Management station), you may want to customize some of the SNMP settings (such as System Name, System Contact and System Location and so on).

Note: Before using USHA+ in SNMP environment, the IP address, gateway must be configured properly. See Chapter 2 for details.

SNMP Access Control Setting

USHA+ supports SNMP protocol. You can use SNMP NMS to manage UPS through the network. The IP address of the workstation must be entered in the USHA+ write access table to prevent unauthorized users from configuring USHA+ via HTTP or SNMP protocols.

Note: If you do not enter the IP address of the workstation to the *Access Control Table* (via Serial Port or Telnet) or the *SNMP/HTTP Access Control* (via Web Browser) in USHA+, the SNMP NMS can only view the UPS status; it will not be able to perform any configuration on USHA+/UPS. (See Pg. 19 *Access Control Table Setting* and Pg. 39 *SNMP/HTTP Access Control* for details.)

SNMP Trap Receivers Setting

See Pg. 40 SNMP Trap Receivers for details.

Set up SNMP Manager Software

1. Add the MIB file of USHA+ in the USHA+ CD-ROM to the MIB database of the SNMP manager.
2. Search for USHA+ in the network
3. To access the USHA+ SNMP agent, use ‘public’ for the GET community string and the Read/Write password (default is ***admin***) for the SET community string.

   GET Community string: *public*
   SET Community string: *admin*

For more information, see the MIB file on the USHA+ CD-ROM.

Chapter 5 Shutdown Software

Install Shutdown Software in Windows 2000/XP/2003

1. Insert the USHA+ CD-ROM into the CD-ROM drive.
2. Run the "**USHA+_Shutdown_Client.exe**" program on the CD-ROM.
3. A dialog box will be posted on the screen, type in the IP address of designated USHA+, its client name and shutdown delay time (Figure 5-1). Click the *Def.* Button if you choose the client name as the workstation you are working on.

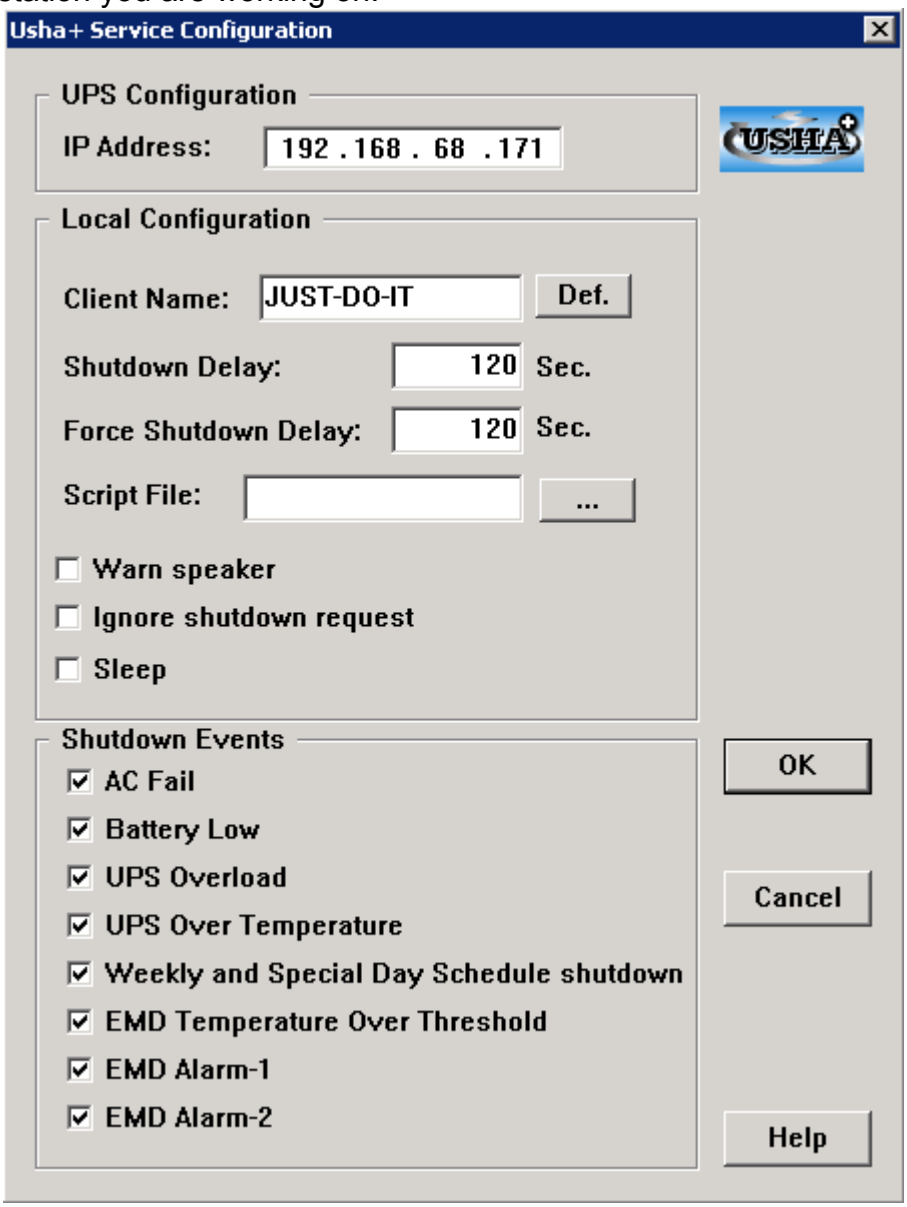


Figure 5-1 Set-up screen

4. Then press the '*OK*' button.
5. After set-up is complete, the shutdown service will connect to the USHA+ automatically.

Note: The client local *Shutdown Delay* must not be greater than that of the *UPS Shutdown Delay* configured in USHA+.

View the Connected Client from Web Browser

1. Run the Web Browser on any machine.
2. Browse the USHA+ IP address.
   For example, browse http://192.168.68.171
3. Select C*lient Table* from *UPS Monitoring* of the main menu and the list of the connected devices will be shown on the screen (Figure 5-2).

Figure 5-2 USHA+ connected (registered) devices list.

Shutdown Process in Windows 2000 / XP /2003

When USHA+ detects a power event, for example, AC power failure, the USHA+ will send the shutdown command to its connected clients. The clients will post a dialog box to notify the user that the system will be shut down (Figure 5-3). The user can select "Shutdown Now" to start the shutdown process or "Close" to close the message. The shutdown software will proceed with the shutdown process and the host or server will be shut down automatically if nothing is selected after the counter has counted down to zero.

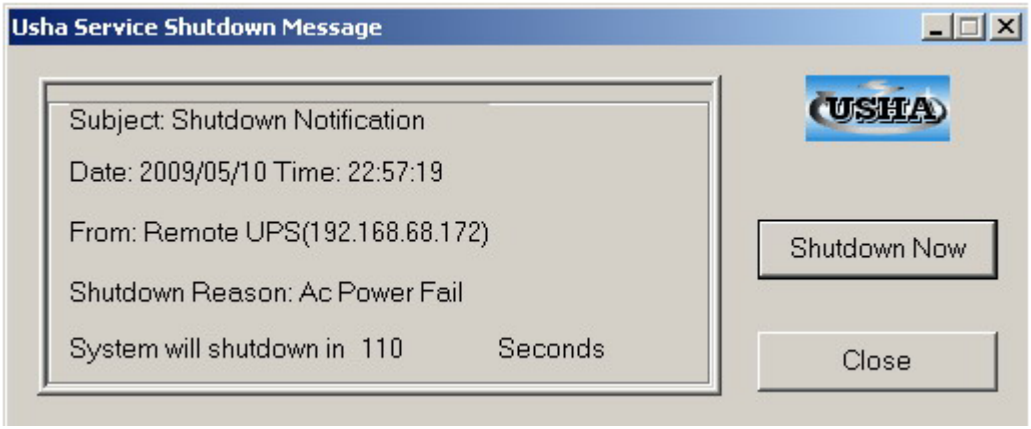


Figure 5-3 Shutdown-warning message.

There are five kinds of state for shutdown software.

1. UPS Connection OK.
2. Trying to locate UPS.
3. Local machine is about to shut down.
4. The service is suspended.
5. Remote UPS is about to shut down or has shut down.

Uninstalling Shutdown Software

To uninstall the shutdown software, the following procedure should be followed.

1. Right mouse click the “battery” icon in the taskbar and select "Exit” to stop the shutdown service.
2. Select the "Add/Remove programs" icon from the Control Panel.
3. Select the "USHA+ service", and then click the "Add/ Remove" icon to remove the software.

Install Shutdown Software in UNIX & Linux (FreeBSD / IBM AIX / RedHat / Sun Solaris / SUSE/ SCO Openserver / SCO Unixware)

1. From a workstation running Unix software and login as a administrator.
2. Insert the USHA+ CD-ROM into the CD-ROM drive.
3. Mount CD-ROM
4. Create new directory. (mkdir uGuard)
5. Copy the shutdown programs into the directory and extract the programs to the directory of ./uGuard, then uncompress it.

   #tar xvf file.tar
   install.sh
   installtime
   uGuard
   unins.sh

6. Type "./install.sh" to proceed with the installation procedure.

7. The shell command will invoke the 'vi uGuard.conf', the user must modify the remote host value, host name and local delay. After saving the file, the installation is complete.

```
;Sample configuration file of uGuard
;RemoteHostIP: The IP address of remote UPS.
;Set the address to default IP (0.0.0.0) if no USHA Service is connected.
RemoteHostIP = 0.0.0.0

;ClientName:The name of the this machine[optional].
;       Free form for this parameter.
;       Maximum 28 bytes long.
ClientName = Mainserver

;WarningBeep status:
WarningBeep = 0
;1 = TRUE; 0 = FALSE(default)

;ShutdownDelay: The local delay time before shutdown.
;        Range from 0 to 65536 seconds.
ShutdownDelay = 120

;Special shutdown script
ShutdownScript = /usr/foo
;ForceShutdownDelay: The delay time for executing shutdown program
;        Range from 0 to 65536 seconds.
ForceShutdownDelay = 120

;Check AC Fail event
;1 = TRUE; 0 = FALSE(default)
AcFail = 0

;Check Battery Low event
;1 = TRUE; 0 = FALSE(default)
BatteryLow = 0

;Check UPS Overload event
;1 = TRUE; 0 = FALSE(default)
UPSOverload = 0

;Check UPS Over Temperature event
;1 = TRUE; 0 = FALSE(default)
OverTemp = 0

;Special Weekly and Special Day Schedule shutdown
;1 = TRUE; 0 = FALSE(default)
WeekDaySched = 0
"/etc/uGuard.conf" [Last line is not complete] 55 lines, 1307 characters
```

*Your server will receive the warning message but won't shutdown
If AcFail=0(default value). It will safety shutdown if AcFail=1.

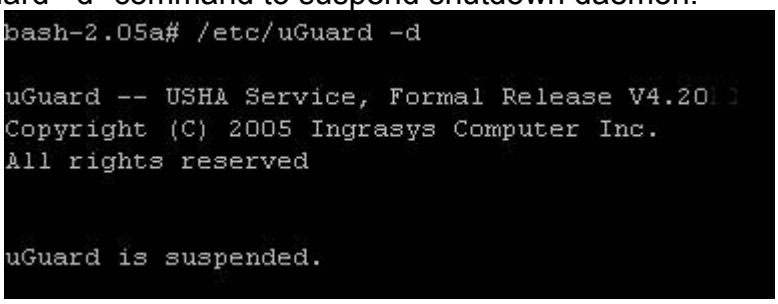
8. Type “y” command to start shutdown daemon when setting over.

```
Do you want to start the daemon now ?[y]
y

uGuard -- USHA Service, Formal Release V4.20
Copyright (C) 2005 Ingrasys Computer Inc.
All rights reserved


uGuard is started.


uGuard -- USHA Service, Formal Release V4.20
Copyright (C) 2005 Ingrasys Computer Inc.
All rights reserved

uGuard will start at next boot up time.
```

uGuard parameters description

```
Copyright (C) 2005 Ingrasys Computer Inc.
All rights reserved

Usage : uGuard [-h][-v][-sS][-uU][-d][-r][-p][-l][-e][-bo][-it][-gn]
  -h : This manual page .
  -v : Show revision information.
  -s : Start the program now.
  -S : Start the program at next boot up time, but not start immediately.
  -u : Unload the program now.
  -U : Unload the program and don*t start at next boot up time,
       but not unload immediately.
  -d : Suspend program.
  -r : Resume program.
  -p : Probe the status.
  -l : List configurations.
  -e : Modify configurations.
  -b : Enable Beep.
  -o : Disable Beep, default.
  -i : Ignore shutdown request.
  -t : Enable shutdown request,default.
  -gn : Log level(Default = 1;log file is /var/uGuard.log).
        n = 0, No log activities .
        n = 1, Log start/stop/warning activities.
```

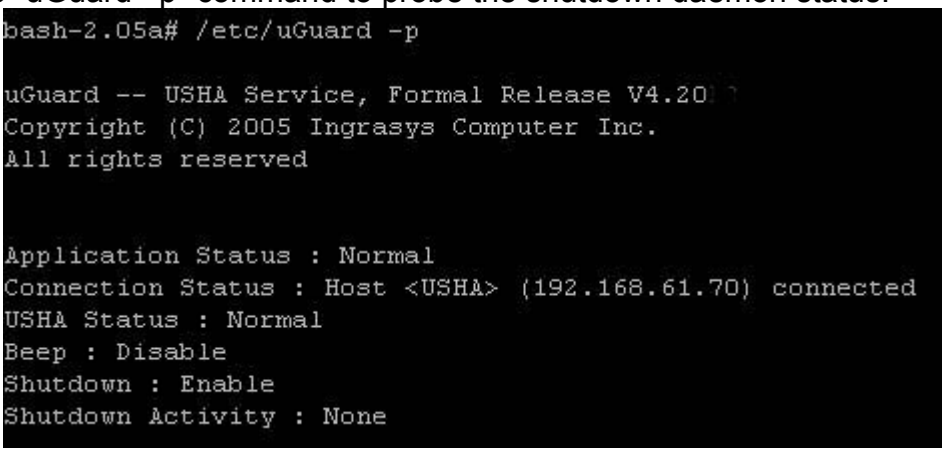
1. Execute “uGuard –d” command to suspend shutdown daemon.


bash-2.05a# /etc/uGuard -d
uGuard -- USHA Service, Formal Release V4.20
Copyright (C) 2005 Ingrasys Computer Inc.
All rights reserved
uGuard is suspended.

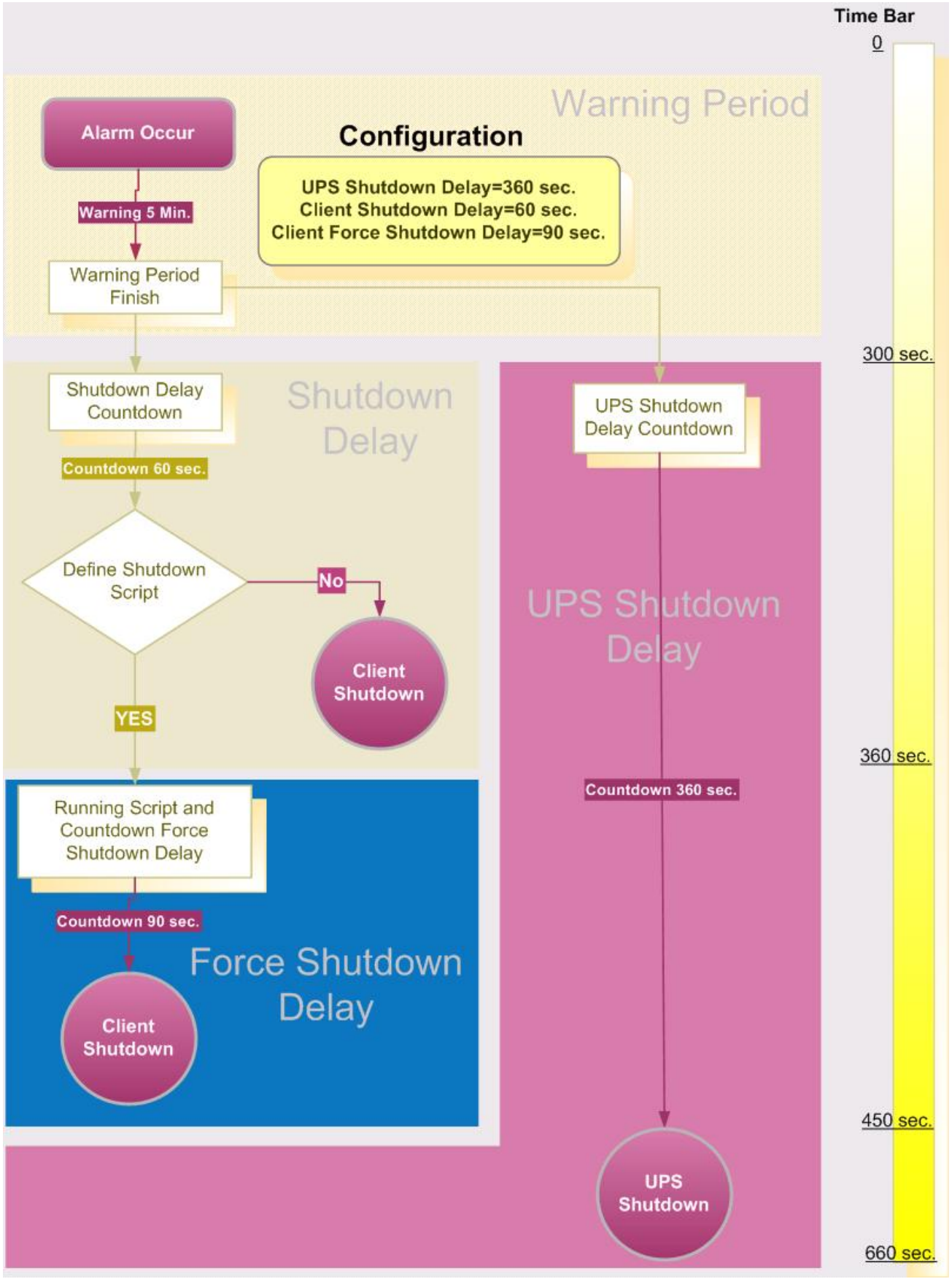
2. Execute “uGuard –r” command to resume shutdown daemon.

bash-2.05a# /etc/uGuard -r
uGuard -- USHA Service, Formal Release V4.20
Copyright (C) 2005 Ingrasys Computer Inc.
All rights reserved
uGuard is resumed.

3. Execute “uGuard –p” command to probe the shutdown daemon status.


bash-2.05a# /etc/uGuard -p
uGuard -- USHA Service, Formal Release V4.20
Copyright (C) 2005 Ingrasys Computer Inc.
All rights reserved
Application Status : Normal
Connection Status : Host <USHA> (192.168.61.70) connected
USHA Status : Normal
Beep : Disable
Shutdown : Enable
Shutdown Activity : None

Shutdown Process



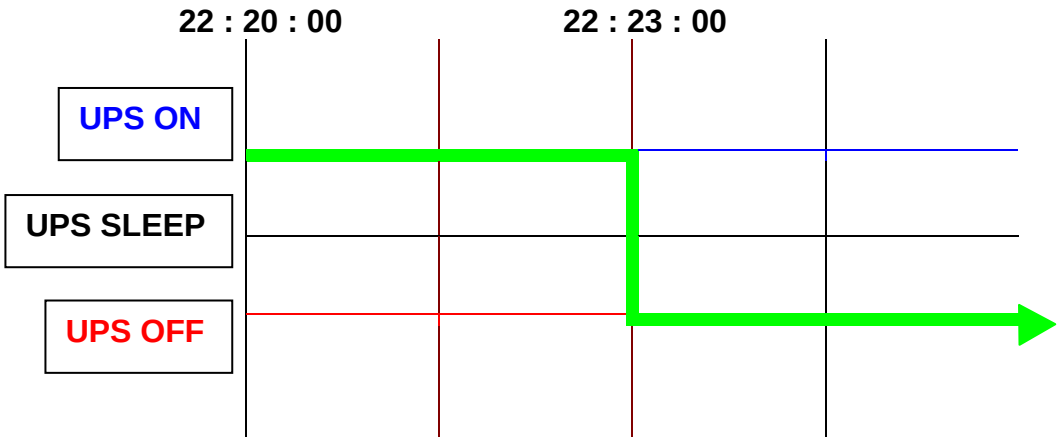
Chapter 6 UPS Power Management

One of the most significant feature of the USHA+ is that it can deal with almost all the power crisis confront to a UPS and protect your valuable information reside in your server from being damage due to the abrupt shutdown of the server. In addition, USHA+ can help corporate to cut the expensive energy bill by shutdown all the computer workstations in the office automatically during holiday or after office-hour using the *Weekly Shutdown* schedule or *Special Day* schedule. These schedules can also assist MIS staff to prevent unauthorised access to the server during the after office-hour time.

Turn off UPS Manually

When there is a need to turn off the UPS manually, go to the *UPS Control* in the *UPS Management* menu. Login as an Administrator. Select the radial button beside *Turn Off UPS* and click the *Send* button.

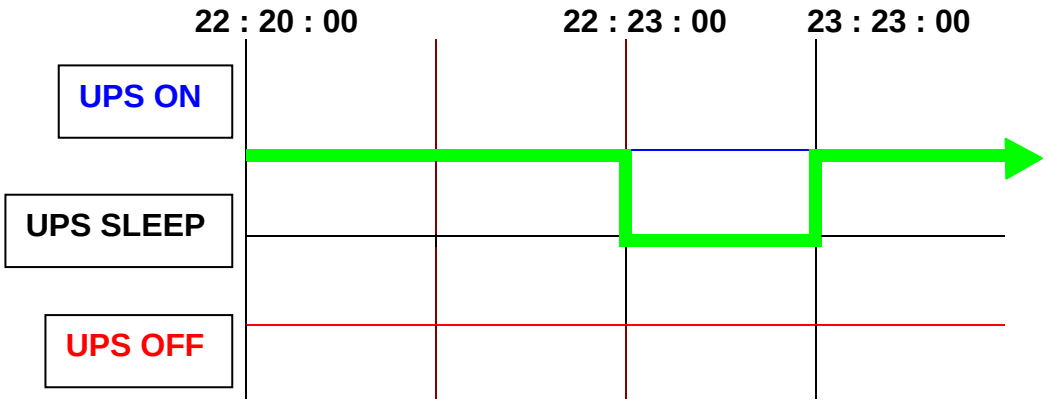
UPS Shutdown Delay (Sec): 180 (default value)
Turn off the UPS manually at 22:20:00



Set UPS To Sleep Mode Manually

When there is a need to set he UPS to sleep mode manually, go to the *UPS Control* in the *UPS Management* menu. Login as an Administrator. Select the radial button beside *UPS Sleep* and click the *Send* button.

UPS Shutdown Delay (Sec): 180 (default value)
UPS Sleep Time (Min): 60 (default value)
Set UPS to sleep manually at 22:20:00

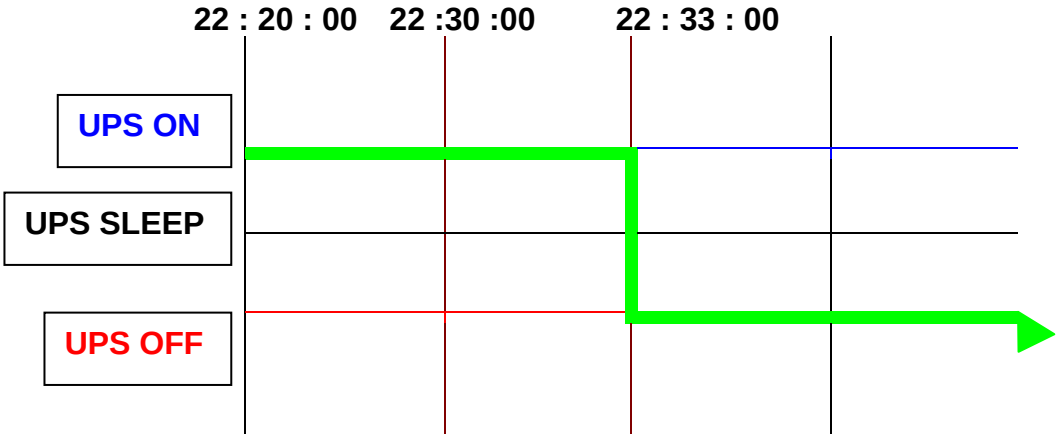


UPS Shutdown during Power Crisis

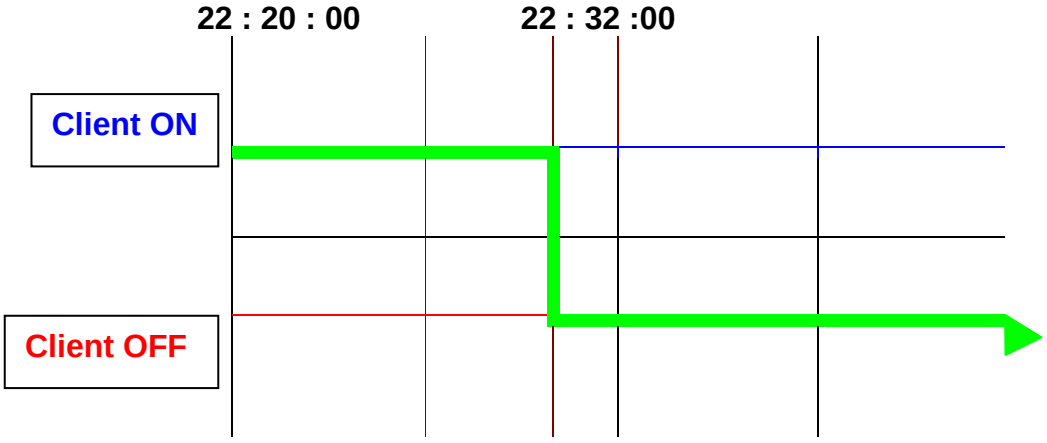
USHA+ responds to seven different kinds of UPS shutdown events and it will take appropriate action to protect your information in your server. Go to the *UPS Shutdown* in the *UPS Management* menu. Logging in as an Administrator. Configure the UPS Shutdown table to meet your need. Click the *Set Value* button when finish. (See Pg. 34, UPS Shutdown for details)

Status:	UPS Turn Off	(default value)
Delay (Min):	10	(default value)
1st Warning (Sec)	30	(default value)
Warning Interval (sec)	30	(default value)

UPS Shutdown Delay (Sec): 180 (default value)
AC failed at 22:20:00



Client's local shutdown delay (Sec):120 (default value)



Managing the UPS Shutdown Schedule

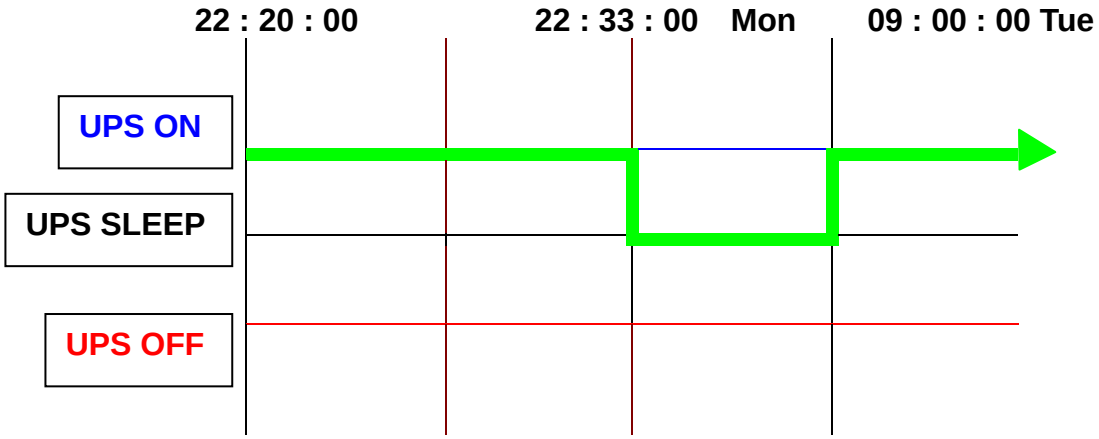
USHA+ supports two kinds of shutdown schedule – (1) **Weekly Schedule**; (2) **Special Day Schedule**.

Note: Before managing the UPS Shutdown Schedule, please make sure that the Date and Time configured in USHA+ is correct.

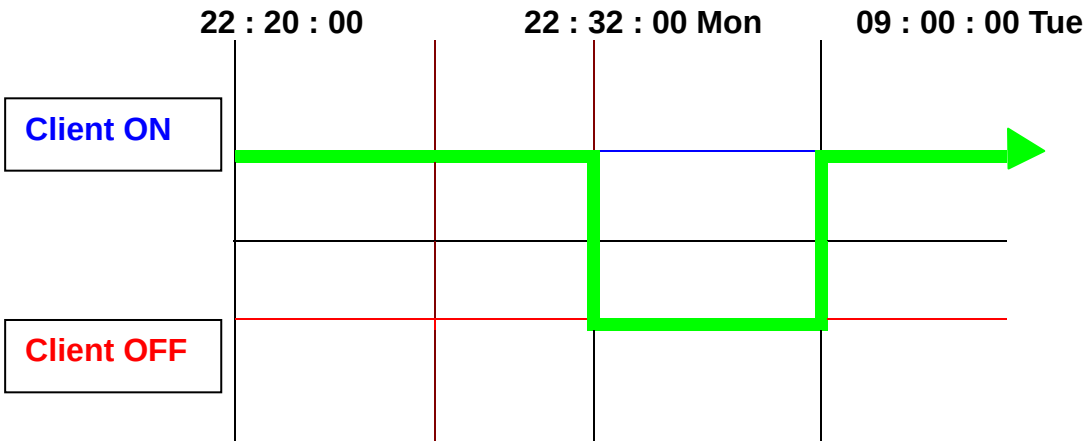
Scenario

Status:	UPS Turn Off	(default value)
Delay (Min):	10	(default value)
1st Warning (Sec):	0	(default value)
Warning Interval (sec):	60	(default value)

UPS Shutdown Delay (Sec): 180 (default value)
Shutdown day & time: Monday 22:20:00
Restart day & time: Tuesday 09:00:00



Client's local shutdown delay (Sec): 120 (default value)



Appendix A Technical Information

Technical Information about USHA+ Smart II

Features

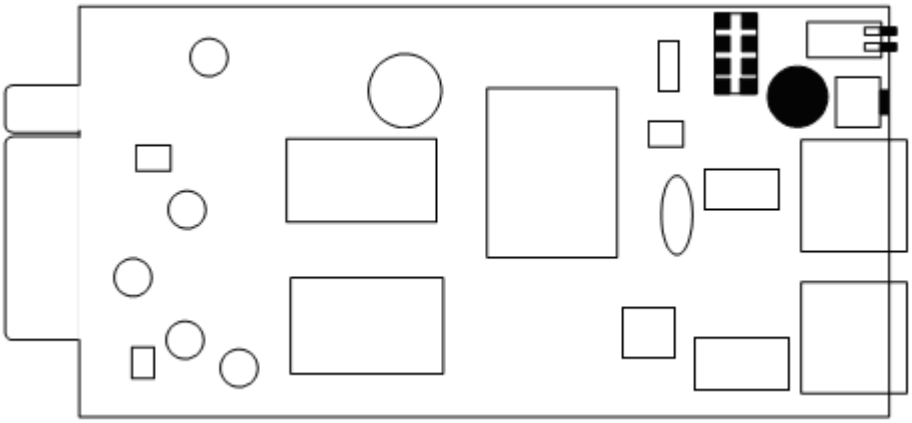
- Configuration from HTTP Web Browser, Telnet and serial port console.
- Management through SNMP manager and HTTP Web Browser.
- Support UPS MIB (RFC1628) and USHA+ MIB
- Provide shutdown programs for multiple Operating System
- Upgrade from TFTP server and serial port.
- UPS control through scheduling.
- History, Event and Statistic log file.
- SNMP alarms detection.
- Report UPS Input, Output, Temperature, Load and Capacity through Java Monitor
- UPS shutdown warning broadcast through shutdown programs
- Support internal Real Time Clock (RTC).

Technical Specification

CPU	16-bits AC1107 Fast Ethernet RISC Processor Phoenix Kernel
Memory	2MB (1Mbit x16) TFBGA Flash ROM 2MB (1Mbit x16) SDRAM
Serial Communication	Two UART Channels, one RJ-45, one Gold finger.
LAN Controller	10/100 Mbits Ethernet controller
Network Connection	10/100 TX RJ-45 jack connector
RTC	Real time clock
UPS Protocol	Standard Device Protocol 3.0.3
Network Protocol	SNMP over UDP/IP HTTP over TCP/IP ARP, TFTP, SSH, SSL , NTP and ICMP
Supported MIB	UPS MIB (RFC1628) USHA+ MIB
Operating Temperature	0 ~ 40° C
Operating Humidity	10 ~ 80 %
Power Input	8-15V DC
Power Consumption	3.0 Watts Maximum
Size	130mm x 60mm x 18.2mm (L x W x H)
Weight	70gm
Regulatory compliance	FCC class B CE class B

Board Layout and Pin Assignment

Board layout

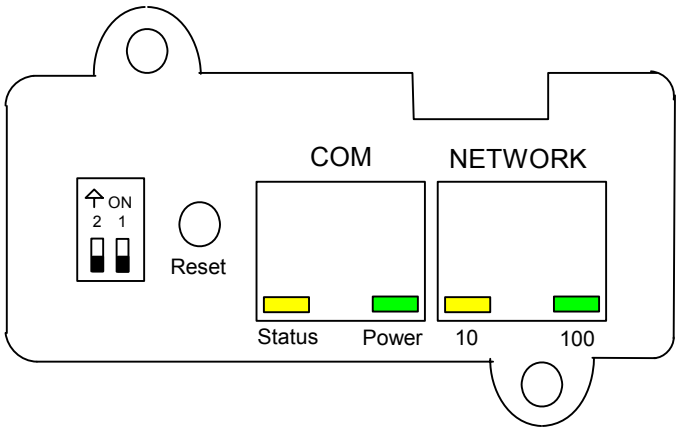


Pin assignment

Bottom Side		Component Side	
Pin 1	GND	Pin 2	DC (8-15V)
Pin 3	Txd→UPS	Pin 4	Rxd←UPS
Pin 5	NC	Pin 6	NC
Pin 7	NC	Pin 8	Short to pin 10
Pin 9	GND	Pin 10	Short to pin 8
Pin 11~25	NC	Pin 12~26	NC

Switch Description

Component layout of the panel



DIP-switch definition

No.	SW1	SW2	Function Mode
1	ON	ON	Manufacture Diagnostic Mode
2	ON	OFF	Serial upgrade mode
3	OFF	ON	Reserved
4	OFF	OFF	Operating Mode

LED Indicator

LED definition

No.	Port	Green LED	Amber LED	Function
1	**Network**	Flashing(1sec)	OFF	Ethernet 100 Traffic
2		OFF	Flashing(1sec)	Ethernet 10 Traffic
3		OFF	OFF	Ethernet disconnect
4	**COM**	ON	Flashing(1~3sec)	RS-232 Port Active
5		OFF	Flashing(1sec)	Serial Upgrade Mode
6		Two LED cross Flashing	Two LED cross Flashing	Auto Diagnostic Mode
7		ON	ON	Hardware Error

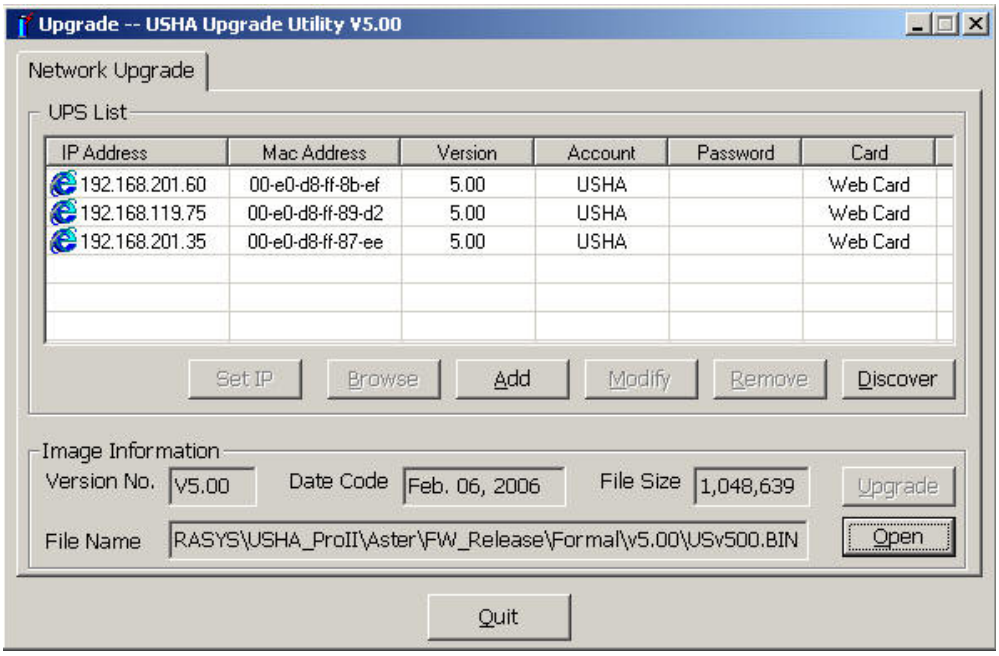
Appendix B Firmware Upgrades

General information

To be able to perform firmware upgrading, USHA+ must be connected to the same network as the workstation from which the file is to be sent.
In the USHA+ Control menu, check that the *Network Upgrade* is enabled and that you have the login string information and the Community Read/Write Password.

Updating USHA+ Firmware from Windows 2000/XP/2003

To perform firmware upgrade, use the **\USHA+_Upgrade_Tools\USHA+.exe** program on the USHA+ CD-ROM. This program is compatible with Windows95/98/Me, Windows NT 3.51/4.0/2000/XP/2003 and higher.



1. **UPS List:** Displays the addresses of the USHA+ present in the local network.
2. **Discover:** Search for the USHA+ on the local network.
3. **Remove:** Removes the selected USHA+ from the UPS List.
4. **Modify:** Lets you modify the parameters of the USHA+ selected in the UPS List.
5. **Add:** Lets you add the IP address of a USHA+ to the UPS List manually.
6. **Browse:** Open USHA+ Webpage of the USHA+ selected in the UPS List.
7. **Set IP**: Re-set USHA+ IP Address; Subnet Mask and Gateway Address of the USHA+ selected in the UPS List.
8. **Upgrade:** Sends the program loaded with the Open button to the selected USHA+ of the UPS List.
9. **Open:** Open and load the new image file for upgrade.
10. **Quit:** Exit the program.

Note: You can simultaneously upgrade up to 4 USHA+'s on the network using the USHA+.exe program

Updating USHA+ Firmware from UNIX

To be able to upgrade the firmware using a UNIX operating system, you must have the command **tftp** installed in your system.
For uploading of the new firmware to USHA+, execute the following command line:

```
# tftp
tftp> binary
tftp> connect <host>
tftp> put <filename> upgrade@<password>@<username>
```

where:

binary	: Binary data download mode
<*host*>	: USHA+ IP address. Example **172.168.1.18**
put	: PUT command
<*filename*>	: Name of the file containing the firmware image. Example: **/mnt/floppy/USHA+500.bin**
upgrade	: Upgrade key word
@	: Separator characters
<*password*>, <*username*>	: User Name and Password for read/write access

Appendix C HTTP Security Control

Flow Chart of the "HTTP Security Control" Option